

Transport Access Program

Ourimbah Station Upgrade

Review of Environmental Factors



Artist's impression of the proposed Ourimbah Station Upgrade, subject to detailed design

Ourimbah Station Upgrade – Review of Environmental Factors

May 2020

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Contents

Abbreviations	7
Definitions.....	9
Executive summary.....	11
1. Introduction	18
1.1. Overview of the Proposal	18
1.2. Location of the Proposal.....	19
1.3. Existing infrastructure and land uses	22
1.4. Purpose of this Review of Environmental Factors.....	33
2. Need for the Proposal	35
2.1. Strategic justification.....	35
2.2. Objectives of the Transport Access Program.....	37
2.3. Objectives of the Proposal.....	37
2.4. Options considered	38
2.5. Justification for the preferred option.....	38
3. Proposal description	39
3.1. Scope of works.....	39
3.2. Design development.....	44
3.3. Construction activities.....	46
3.4. Property acquisition	51
3.5. Operation and maintenance	51
4. Statutory considerations	52
4.1. Commonwealth legislation.....	52
4.2. NSW legislation and regulations.....	53
4.3. Ecologically sustainable development	58
5. Community and stakeholder consultation.....	60
5.1. Stakeholder consultation during concept design.....	60
5.2. Consultation requirements under the Infrastructure SEPP.....	60
5.3. Consultation strategy.....	62
5.4. Aboriginal community involvement	64
5.5. Ongoing consultation.....	64
6. Environmental impact assessment	65
6.1. Traffic, transport and access	65
6.2. Landscape and visual amenity	73
6.3. Noise and vibration.....	79
6.4. Aboriginal heritage	88
6.5. Non-Aboriginal heritage.....	89
6.6. Biodiversity.....	95
6.7. Socio-economic impacts.....	102
6.8. Contamination, geology and soils.....	104
6.9. Hydrology and water quality	107
6.10. Bushfire.....	109
6.11. Waste.....	111

6.12. Air quality	112
6.13. Sustainability	112
6.14. Climate change	112
6.15. Greenhouse gas emissions	113
6.16. Cumulative impacts	113
7. Environmental management.....	115
7.1. Environmental management plans	115
7.2. Mitigation measures	115
8. Conclusion.....	126
References.....	128
Appendix A Consideration of matters of National Environmental Significance ...	130
Appendix B Consideration of clause 228.....	131

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Figures

Figure ES-1-1 Key features of the Proposal (indicative only, subject to detailed design)	12
Figure ES-1-2 Photomontage of the Proposal (indicative only subject to detailed design)	13
Figure ES-1-3 Planning approval and consultation process for the Proposal.....	15
Figure 1-1 Regional and local site context.....	20
Figure 1-2 Proposal Area	21
Figure 1-3 Ourimbah Station viewed from the footbridge looking north.....	22
Figure 1-4 View of pedestrian footbridge looking south from Platform 1	23
Figure 1-5 View of eastern end of the pedestrian footbridge accessing the Shirley Street commuter car park	23
Figure 1-6 Ourimbah Station Platform 1 looking north	24
Figure 1-7 Existing shelter on Platform 1 to the south of the brick station building.....	25
Figure 1-8 Looking north along Platform 2, (from left to right) the timber station building, Signal Box Building and Station Master's Residence	26
Figure 1-9 Storage building on Platform 2, to the south of the station building.....	26
Figure 1-10 Looking south along Platform 2	27
Figure 1-11 View of brick station building on Platform 1	28
Figure 1-12 View of station building on Platform 2.....	29
Figure 1-13 View of Signal Box building to north of the timber station building on Platform 2 .	30
Figure 1-14 View of commuter car park looking north from the footbridge	31
Figure 1-15 View of Shirley Street commuter car park looking south from the entry off Shirley Street	31
Figure 1-16 View from Shirley Street commuter car park looking towards the brick station building and ramp to Platform 1 and the footbridge	32
Figure 1-17 View of entry arch to the memorial park looking south-east towards the footbridge. The tree behind the left pillar of the memorial arch is proposed to be removed	33
Figure 3-1 Key features of the Proposal (indicative only, subject to detailed design)	41
Figure 3-2 Location of lift servicing Platform 1 indicated by the dashed red line. The need for a retaining wall and a path to link to Platform 1 (dashed blue line) is evident in the image.	42
Figure 3-3 The proposed lift servicing Platform 2 to be located in the position of the existing stairs. A section of the sandstone wall in the right foreground is proposed to be removed.....	42
Figure 3-4 Existing non-compliant ramp to the timber station building on Platform 2	43
Figure 3-5 Location of proposed temporary construction compound area (yellow). The hi-rail access pad, adjacent the construction compound, is visible as the dark area obscuring the rail lines.....	50
Figure 3-6 Proposed construction compound area and hi-rail vehicle access pad to the south of the footbridge (left), and proposed entry to the compound from the Shirley Street commuter car park (right).....	50
Figure 4-1 Wyong LEP zoning map (Source Wyong LEP 2013, Sheet LZN_009)	58
Figure 6-1 Surrounding road network, pick-up and set-down area and parking	66

Figure 6-2 Pedestrian infrastructure around Ourimbah station.....	68
Figure 6-3 Existing cycling infrastructure – (a) bike racks, (b) bike lockers and additional bike racks, (c) pedestrian and cyclist access to Mill Street via the pedestrian bridge over Bangalow Creek	69
Figure 6-4 Photomontage of the Proposal (subject to detailed design)	73
Figure 6-5 TfNSW (former Roads and Maritime Services) visual impact grading matrix (Source: TfNSW, 2018b)	74
Figure 6-6 Approximate area from which the Proposal Area can be viewed (Source: Envisage 2020).....	75
Figure 6-7 Location of Noise Catchment Areas (NCAs) (Source: Pulse Acoustic, 2020)	80
Figure 6-8 Noise monitoring locations	81
Figure 6-9 Ourimbah Station, circa 1911. Note early footbridge location. (Source: Artefact 2020 - Ourimbah Regional Residents Association Inc.)	90
Figure 6-10 World War 1 monument (left) and World War 2 monument (right)	91
Figure 6-11 Tree location plans (Source All Arbor Solutions, 2020).....	96
Figure 6-12 Fan palms in existing garden bed proposed for removal.....	98
Figure 6-13 Tree 2, <i>Sapium sebiferum</i> (Chinese Tallowwood)	99
Figure 6-14 Trees to be retained and removed.....	100
Figure 6-15 Tree 13, <i>Cupressocyparis leylandii</i> (Leightons Green). Selective branch reduction and removal may be required to establish temporary stair access (approximate location indicated by the yellow shading) to the pedestrian footbridge	101
Figure 6-16 Extract from the CCC online maps (CCC, 2020) depicting modelled 1 per cent AEP flood event (shaded grey) with respect to the Proposal Area (indicated by the red polygon).	108
Figure 6-17 Extract from the CCC online maps (CCC, 2020) depicting bushfire prone land with respect to the Proposal Area (indicated by the blue polygon).	110

Tables

Table 2-1 Key NSW Government policies and strategies applicable to the Proposal.....	35
Table 3-1 Indicative construction staging for key activities.....	46
Table 4-1 Other Commonwealth legislation applicable to the Proposal	52
Table 4-2 Other NSW legislation applicable to the Proposal.....	54
Table 4-3 Relevant provisions of the Wyong LEP 2013.....	57
Table 5-1 Infrastructure SEPP consultation requirements	60
Table 6-1 Identified viewpoints	76
Table 6-2 Summary of visual impact during construction.....	77
Table 6-3 Summary of visual impact during operation	78
Table 6-4 Unattended noise monitoring results – background noise levels.....	81
Table 6-5 NMLs for construction.....	82

Table 6-6 Recommended minimum working distances from vibration intensive plant.....	84
Table 6-7 Summary of predicted noise impacts.....	85
Table 6-8 Heritage items within the Proposal Area and within the vicinity.....	91
Table 6-9 Terms for assessing the magnitude of heritage impact.....	92
Table 7-1 Proposed mitigation measures	115

Abbreviations

Term	Meaning
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
AS	Australian Standard
ASA	Asset Standards Authority (refer to Definitions)
ASS	Acid Sulfate Soils
BAZ	Boarding Assistance Zone
BCA	Building Code of Australia
BC Act	<i>Biodiversity Conservation Act 2016 (NSW)</i>
BS	British Standard
CCC	Central Coast Council
CEMP	Construction Environmental Management Plan
CCTV	Closed Circuit Television
CLM Act	<i>Contaminated Land Management Act 1997 (NSW)</i>
CLMP	Community Liaison Management Plan
CM Act	<i>Coastal Management Act 2016 (NSW)</i>
CNVMP	Construction Noise and Vibration Management Plan
CNVS	Construction Noise and Vibration Strategy (TfNSW, 2019a)
CTMP	Construction Traffic Management Plan
D&C	Design & Construct
dB(A)	Decibels using the A-weighted scale measured according to the frequency of the human ear.
DAWE	Department of Agriculture, Water and the Environment (Cwlth)
DBH	Diameter Breast Height
DCP	Development Control Plan
DDA	<i>Disability Discrimination Act 1992 (Cwlth)</i>
DoEE	Commonwealth Department of the Environment and Energy
DP&E	(former) NSW Department of Planning and Environment
DPIE	NSW Department of Planning, Industry and Environment
DSAPT	<i>Disability Standards for Accessible Public Transport (2002)</i>
ECM	Environmental Controls Map
EMS	Environmental Management System
EPA	Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979 (NSW)</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000 (NSW)</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)</i>

Term	Meaning
EPL	Environment Protection Licence
ESD	Ecologically Sustainable Development (refer to Definitions)
FM Act	<i>Fisheries Management Act 1994 (NSW)</i>
Heritage Act	<i>Heritage Act 1977 (NSW)</i>
ICNG	<i>Interim Construction Noise Guideline</i> (Department of Environment and Climate Change, 2009).
Infrastructure SEPP	<i>State Environmental Planning Policy (Infrastructure) 2007 (NSW)</i>
IS rating	Infrastructure Sustainability rating under ISCA rating tool (v 2.0)
ISCA	Infrastructure Sustainability Council of Australia
LEP	Local Environmental Plan
LGA	Local Government Area
MCA	Multi-criteria analysis
NES	National Environmental Significance (refers to matters of National Environmental Significance under the EPBC Act)
NPW Act	<i>National Parks and Wildlife Act 1974 (NSW)</i>
NSW	New South Wales
NVIA	Noise and Vibration Impact Assessment
OEH	(former) NSW Office of the Environment and Heritage
PDP	Public Domain Plan
PoEO Act	<i>Protection of the Environment Operations Act 1997 (NSW)</i>
PMF	Probable Maximum Flood
REF	Review of Environmental Factors (this document)
Roads Act	<i>Roads Act 1993 (NSW)</i>
RMS	Former NSW Roads and Maritime Services (now Transport for NSW)
SEPP	State Environmental Planning Policy
SoHI	Statement of Heritage Impact
SHI	State Heritage Inventory
SHR	State Heritage Register
TfNSW	Transport for NSW
TGSIs	Tactile Ground Surface Indicators
TPZ	Tree Protection Zone
UDP	Urban Design Plan
WARR Act	<i>Waste Avoidance and Resource Recovery Act 2001 (NSW)</i>
WM Act	<i>Water Management Act 2000 (NSW)</i>

Definitions

Term	Meaning
Asset Standards Authority	The ASA is an independent body within TfNSW, responsible for engineering governance, assurance of design safety, and ensuring the integrity of transport and infrastructure assets.
Average Recurrence Interval	The likelihood of occurrence, expressed in terms of the long-term average number of years, between flood events as large as or larger than the design flood event. For example, floods with a discharge as large as or larger than the 100-year ARI flood will occur on average once every 100-years.
Concept design	The concept design is the preliminary design presented in this REF, which would be refined by the Construction Contractor (should the Proposal proceed) to a design suitable for construction (subject to TfNSW acceptance).
Construction contractor	The entity appointed by TfNSW to undertake the construction of the Proposal. The Construction Contractor is therefore responsible for all work on the project, both design and construction.
Determining authority	A Minister or public authority on whose behalf an activity is to be carried out or public authority whose approval is required to carry out an activity (under Division 5.1 of the EP&A Act).
Disability Standards for Accessible Public Transport	The <i>Commonwealth Disability Standards for Accessible Public Transport 2002</i> (as amended), authorised under the <i>Commonwealth Disability Discrimination Act 1992</i> (DDA).
Ecologically Sustainable Development	As defined by clause 7(4) Schedule 2 of the EP&A Regulation.
Feasible	A work practice or abatement measure is feasible if it is capable of being put into practice or of being engineered and is practical to build given project constraints such as safety and maintenance requirements.
Interchange	Transport interchange refers to the area/s where passengers transit between vehicles or between transport modes. It includes the pedestrian pathways and cycle facilities in and around an interchange.
Kiss and ride zone	Dedicated limited-time parking bay near a public transport mode for picking up or dropping off customers.
Out of hours works	Defined as works undertaken <i>outside</i> standard construction hours (i.e. outside of 7am to 6pm Monday to Friday, 8am to 1pm Saturday and no work on Sundays/public holidays).
Probable Maximum Flood	The largest flood that could conceivably occur at a location, estimated from probable maximum precipitation.
Proponent	A person or body proposing to carry out an activity under Division 5.1 of the EP&A Act – in the case of the Proposal, Transport for NSW.
Proposal	The construction and operation of the Ourimbah Station Upgrade Project.
Rail possession / shutdown	Shutdown is the term used by railway building/maintenance contractors to indicate that they have taken possession of the track (usually a section of track) for a specified period, where no trains operate for a specified time. This is necessary to ensure the safety of workers and rail users.

Term	Meaning
Reasonable	Selecting reasonable measures from those that are feasible involves making a judgment to determine whether the overall benefits outweigh the overall adverse social, economic and environmental effects, including the cost of the measure.
Sensitive receivers	Land uses which are sensitive to potential noise, air and visual impacts, such as residential dwellings, schools and hospitals.
Vegetation Offset Guide (TfNSW, 2019)	The TfNSW guide that applies where there is vegetation clearing proposed, and where the impact of the proposed clearing is not deemed 'significant' for the purposes of Section 5.5 of the EP&A Act.

Executive summary

Overview

Transport for NSW (TfNSW) is the government agency responsible for the delivery of major transport infrastructure projects in NSW and is the proponent for the Ourimbah Station Upgrade (the 'Proposal').

The Proposal is part of the Transport Access Program, a NSW Government initiative, which aims to provide a better experience for public transport customers by delivering accessible, modern, secure and integrated transport infrastructure.

As part of the Transport Access Program, the Proposal would aim to provide a station precinct that is accessible for everyone including people with a disability, limited mobility, parents/carers with prams, and customers with luggage.

This Review of Environmental Factors (REF) has been prepared to assess all matters affecting or likely to affect the environment by reason of the construction and operation of the Proposal under the provisions of Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Description of the Proposal

The key features of the Proposal are summarised as follows:

- install two new lifts connecting the existing footbridge to the platforms to provide an accessible path of travel
- demolish the existing western staircase connected to the footbridge to accommodate the new lift and installation of a new staircase (this may include installing a temporary staircase)
- create an accessible path from the Pacific Highway station entrance to the existing footbridge and remove the existing non-compliant ramp
- install a new staircase from the Pacific Highway station entrance and remove the existing staircase
- provide compliant access to the waiting room on Platform 2
- regrade sections of Platform 2 to provide an accessible path of travel along the platform
- provide a new station entrance on Platform 2
- remove the existing non-compliant ramp from the Shirley Street commuter car park to Platform 1 and install a new ramp
- modify the waiting room on Platform 1 to allow equitable access.

Subject to approval, construction is expected to commence in the third quarter (Q3) of 2020 and take around 18 months to complete. A detailed description of the Proposal is provided in Chapter 3 of this REF, while an overview of the Proposal is shown in Figure ES-1-1 and Figure ES-1-2.

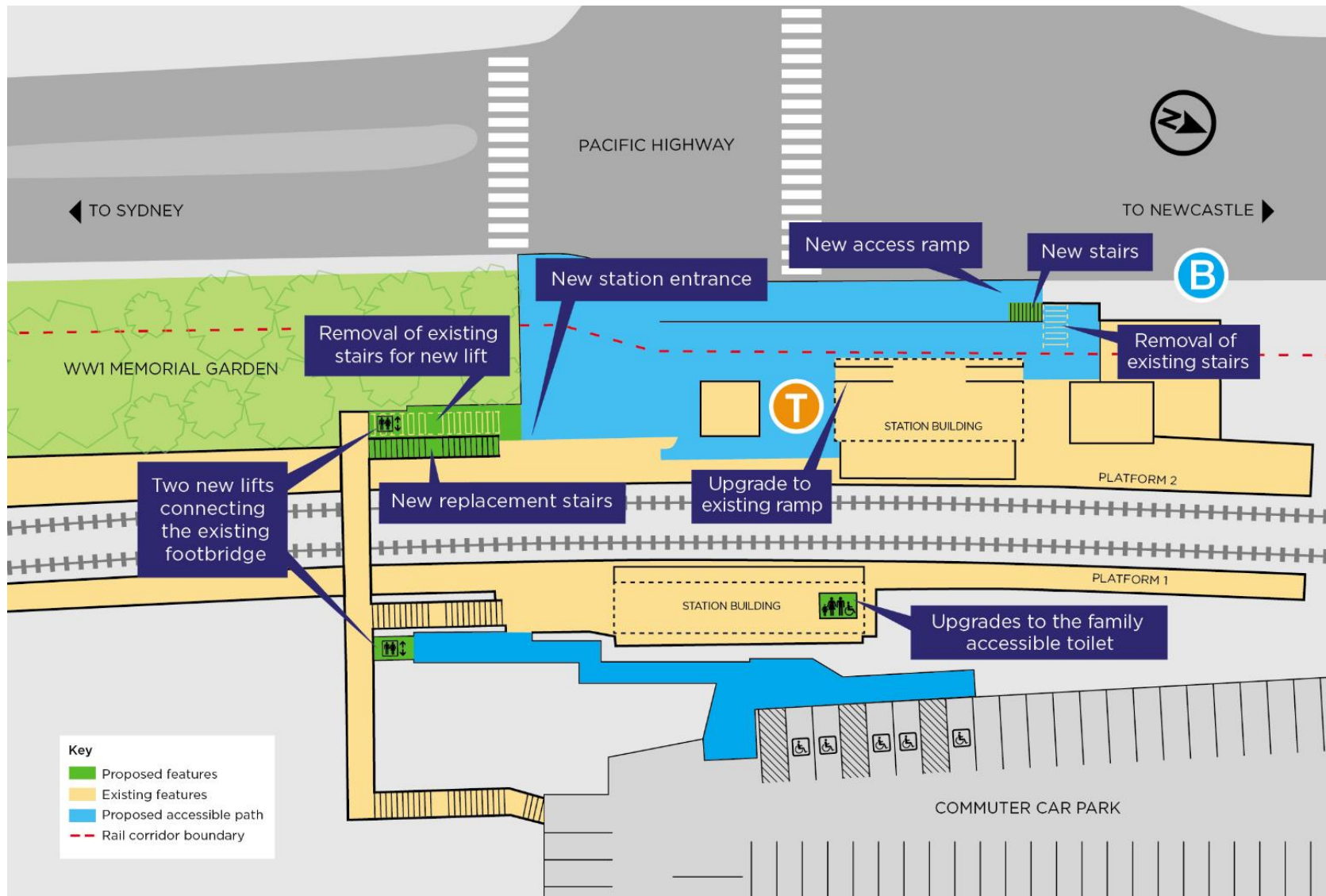


Figure ES-1-1 Key features of the Proposal (indicative only, subject to detailed design)



Figure ES-1-2 Photomontage of the Proposal (indicative only subject to detailed design)

Need for the Proposal

Ourimbah Station has been identified for an accessibility upgrade as it does not currently meet the key requirements of the *Commonwealth Disability Discrimination Act 1992* (DDA) and the *Disability Standards for Accessible Public Transport 2002* (DSAPT).

The station entrances to the platform do not facilitate access for people with reduced mobility, parents/carers with prams or customers with luggage. Currently, the ramps do not meet Australian Standards, there are no accessible waiting spaces or lift facilities, and no accessible path of travel to the bus stop on the Pacific Highway and to station facilities (such as the waiting rooms).

The Proposal is designed to achieve an enhanced customer experience outcome, deliver improved travel to and between transport modes, encourage greater public transport use and better integrate interchanges with the role and function of town centres.

Chapter 2 of this REF further describes the need for the Proposal and outlines the options considered in developing the design.

Community and stakeholder consultation

Community consultation activities for the Proposal would be undertaken during the public display period of this REF and the public invited to submit feedback to help TfNSW understand what is important to customers and the community. The REF would be displayed for a period of two weeks. Further information about specific consultation activities is included in Section 5.3 of this REF.

During the display period a Project Infoline (1800 684 490) and email address (projects@transport.nsw.gov.au) would be available for members of the public to make enquiries.

In accordance with the requirements of the *State Environmental Planning Policy (Infrastructure) 2007* (Infrastructure SEPP), consultation is required with local councils and/or public authorities in certain circumstances, including where council managed infrastructure is affected. Consultation with Central Coast Council (CCC) will be required under the Infrastructure SEPP and would continue through the detailed design and construction of the Proposal.

TfNSW would review and assess all feedback received during the public display period, prior to determining whether or not to proceed with the Proposal.

Should the Proposal proceed to construction, the community would be kept informed throughout the duration of the construction period. Figure ES-1-3 shows the planning approval and consultation process for the Proposal.

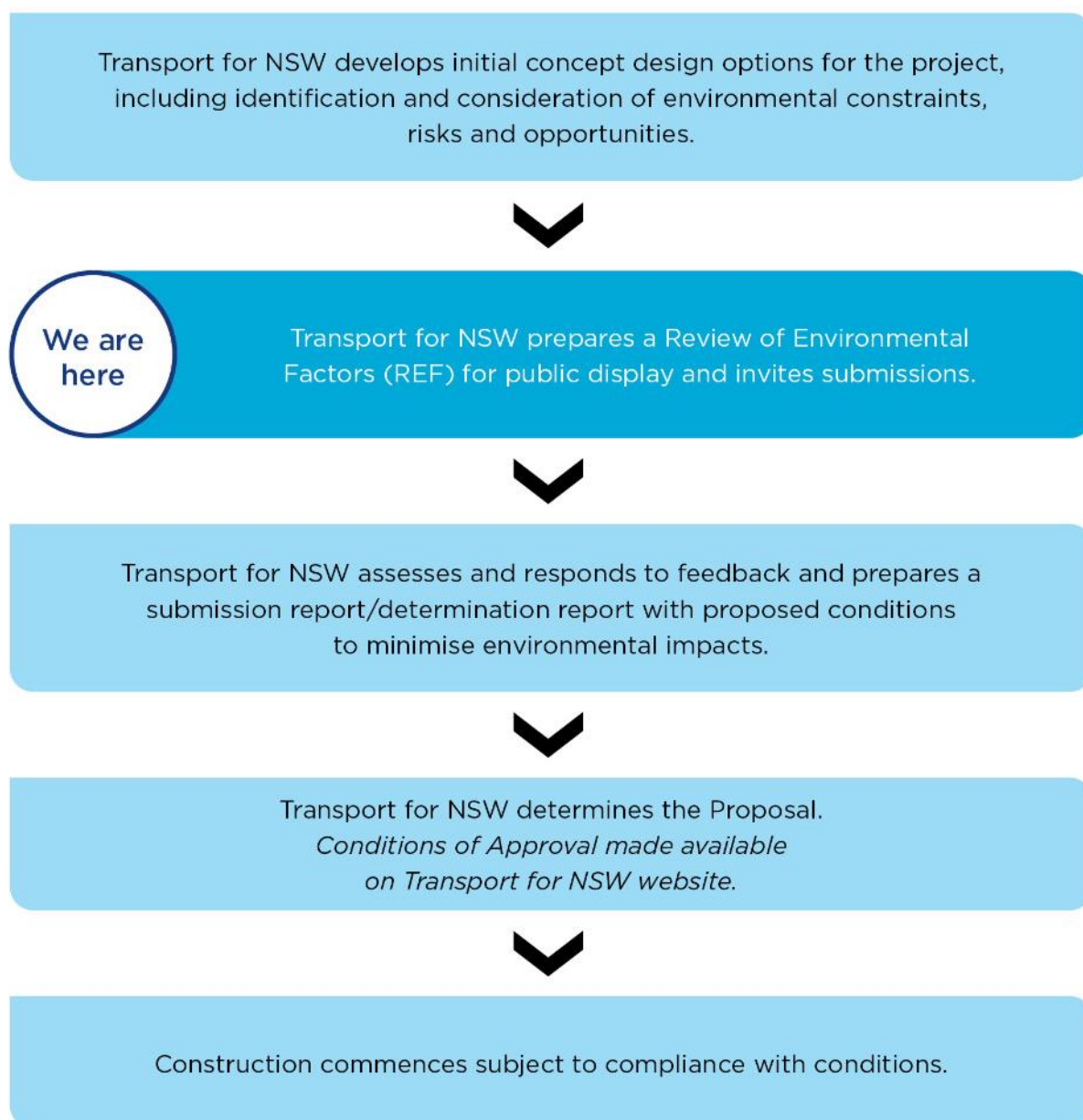


Figure ES-1-3 Planning approval and consultation process for the Proposal

Environmental impact assessment

This REF identifies the potential environmental benefits and impacts of the Proposal and outlines the mitigation measures to reduce the identified impacts.

The Proposal would provide the following benefits:

- improved and equitable access to Ourimbah Station for customers resulting from the installation of two lifts and the connection of both platforms to the footbridge
- improved and equitable entries to the station through provision of compliant ramps from both the Pacific Highway and the Shirley Street commuter car park
- improved and equitable access to station building waiting rooms and facilities

- improved amenity and safety for customers at the station resulting from improved lighting, public address system, card readers, and CCTV.

The following key impacts have been identified should the Proposal proceed:

- temporary changes to pedestrian movements to, from and around the station during construction works associated with the lift installations, which would be managed via the implementation of a Construction Traffic Management Plan and Community Liaison Management Plan
- impacts to the visual character of Ourimbah Station due to the installation of the new lifts, entrance ramps, stairs and regrading, and the removal of a mature tall tree and portion of the World War 1 (WW1) memorial. The visual impacts have been assessed as ranging from negligible to high-moderate. Visual changes would be most prominent from the Pacific Highway and residential properties west of the station across the Pacific Highway. The detailed design and integration with the surrounding built form would be addressed in the preparation of an Urban Design Plan. In addition, a Public Domain Plan would be prepared to address materials, colours, landscaping, fencing and pavement treatments to complement the character of the heritage buildings and link with the existing public domain
- temporary noise and vibration impacts during construction. These impacts were assessed as variable and dependent on the construction stage and hours of work. Impacts would be mitigated through the implementation of a range of mitigate measures proposed in the NVIA (Pulse Acoustic 2020) and the *Construction Noise and Vibration Strategy* (TfNSW, 2019a)
- negligible to minor adverse impacts to the heritage setting of the station and the WW1 Monument as a result of the introduction of new elements (including lifts and ramps) and the removal of one mature tree
- moderate adverse direct impacts to the heritage fabric of the Station building on Platform 1 through the introduction of DSAP compliant access to the Waiting Room, and to the WW1 Monument through the removal of the eastern dwarf wall
- removal of five medium sized trees, which would be offset with 20 locally endemic native species.

Further information regarding these impacts is provided in Chapter 6 of the REF.

Conclusion

This REF has been prepared having regard to Sections 5.5 and 5.7 of the EP&A Act and clause 228 of the EP&A Regulation, to ensure that TfNSW takes into account to the fullest extent possible, all matters affecting or likely to affect the environment as a result of the Proposal.

The detailed design of the Proposal would also be done in accordance with the Infrastructure Sustainability Council of Australia (ISCA) Infrastructure Sustainability (IS) Rating Tool (v 1.2) taking into account the principles of ecologically sustainable development (ESD).

Should the Proposal proceed, any potential associated adverse impacts would be appropriately managed in accordance with the mitigation measures outlined in this REF, and the Conditions of Approval imposed in the Determination Report. This would ensure the Proposal is delivered to maximise benefit to the community and minimise any adverse impacts on the environment.

In considering the overall potential impacts outlined in this REF, the Proposal is unlikely to significantly affect the environment including critical habitat or threatened species, populations, ecological communities or their habitats.

1. Introduction

Transport for NSW (TfNSW) is responsible for strategy, planning, policy, procurement, regulation, funding allocation and other non-service delivery functions for all modes of transport in NSW including road, rail, ferry, light rail, point to point, cycling and walking. TfNSW is the proponent for the Ourimbah Station Upgrade (the 'Proposal').

1.1. Overview of the Proposal

1.1.1. Need for the Proposal

The Ourimbah Station Upgrade, the subject of this Review of Environmental Factors (REF), forms part of the Transport Access Program. This Program is an initiative to provide a better experience for public transport customers by delivering accessible, modern, secure and integrated transport infrastructure.

Ourimbah Station was identified for an accessibility upgrade as the non-compliant pathways, car parking and stairs between the platforms do not facilitate access for people with reduced mobility, parents or carers with prams, or customers with luggage.

The Proposal would improve accessibility of the station in line with the requirements of the Commonwealth *Disability Discrimination Act 1992* (DDA) and the *Disability Standards for Accessible Public Transport 2002* (DSAPT). The upgrades would provide an improved customer experience for existing and future users of the station.

The needs and objectives of the Proposal are further discussed in Chapter 2 of this REF.

1.1.2. Key features of the proposal

The key features of the Proposal are summarised as follows:

- install two new lifts connecting the existing footbridge to the platforms to provide an accessible path of travel
- demolish the existing western staircase connected to the footbridge to accommodate the new lift and installation of a new staircase (this may include installing a temporary staircase)
- create an accessible path from the Pacific Highway station entrance to the existing footbridge and remove the existing non-compliant ramp
- install a new staircase from the Pacific Highway station entrance and remove the existing staircase
- provide compliant access to the waiting room on Platform 2
- regrade sections of Platform 2 to provide an accessible path of travel along the platform
- provide a new station entrance on Platform 2
- remove the existing non-compliant ramp from the Shirley Street commuter car park to Platform 1 and install a new ramp
- modify the waiting room on Platform 1 to allow equitable access
- lighting and closed-circuit television (CCTV) cameras to provide coverage to meet security standards for new infrastructure

- ancillary work including minor electrical upgrades to support new infrastructure, installation of platform hearing loops, protection or relocation of services, opal card reader relocation, drainage works, wayfinding signage and removal or relocation of station furniture.

The schematic image provide in Figure ES-1-1 and Figure 3-1 shows the general layout of key elements of the Proposal based on the strategic concept design. The design would be further refined during the detailed design phase.

Subject to planning approval, construction is expected to commence in the third quarter (Q3) of 2020 and take around 18 months to complete.

A detailed description of the Proposal is provided in Chapter 3 of this Review of Environmental Factors (REF).

1.2. Location of the Proposal

The Proposal is located in the suburb of Ourimbah, within the Central Coast Council (CCC) Local Government Area (LGA). Ourimbah Station is approximately 90 kilometres from Central Station, Sydney, and about 10 kilometres north of Gosford Station. Ourimbah Station is serviced by the Central Coast and Newcastle Line of the Intercity Trains Network. The location of the Proposal, and its regional context, is shown in Figure 1-1.

Ourimbah Station lies between the Pacific Highway to the west and Mill Street to the east, and along with the adjacent memorial park, forms a central feature of the town.

The station is accessed either from the Pacific Highway, which borders the station to the west, or from Brownlee Street, Shirley Street or Mill Street to the east. Pedestrian access from the east is via a walkway from Mill Street across Bangalow Creek, whilst vehicular access to the Shirley Street commuter car park can be gained at the corner of Brownlee Street and Shirley Street. An existing bus stop and taxi zone is located on the Pacific Highway at the western entrance to the station.

The Proposal Area has been defined as the area within which the proposed accessibility upgrades would occur. Indicatively this would include the area between the Pacific Highway to the west and the Shirley Street commuter car park to the east, accessed from Mill Street and Shirley Street. This area encompasses the station buildings, platforms, footbridges, the Shirley Street commuter car park, the memorial park, and the bus stop and areas within the Pacific Highway to the west of the station (refer Figure 1-2).

The Proposal includes upgrades to Ourimbah Station on land owned by RailCorp, with the station facilities maintained by Sydney Trains, and rail services operated by NSW TrainLink. In addition, the Proposal includes some work within the Pacific Highway road reserve, which is a classified State Road under the control of TfNSW (formerly Roads and Maritime Services). This proposed work within the road reserve is to facilitate the access ramp to the new station entrance, which would improve access from the existing bus stop, taxi stand and kiss and ride areas to the station.



Figure 1-1 Regional and local site context



Figure 1-2 Proposal Area

1.3. Existing infrastructure and land uses

1.3.1. Station infrastructure

The Ourimbah Railway Station Group and Residence is listed as a heritage item of local significance under the *Wyang Local Environmental Plan 2013* (WLEP) (I61). It is also listed on the Sydney Trains Section 170 Heritage and Conservation Register. The heritage listing includes the station buildings associated with the railway station, the stationmaster's residence, the footbridge between platforms, the platforms, battery box and signal box.

Platforms and stairs

Ourimbah Station consists of platforms either side of the rail line. The eastern platform (Platform 1) provides services south to Sydney Central and the western side (Platform 2) provides services north to Newcastle (Figure 1-3).

Access between platforms is via a concrete pedestrian footbridge, located at the southern end of the platforms (Figure 1-4). The easterly end of the footbridge provides an access stair directly to the Shirley Street commuter car park (Figure 1-5).



Figure 1-3 Ourimbah Station viewed from the footbridge looking north



Figure 1-4 View of pedestrian footbridge looking south from Platform 1



Figure 1-5 View of eastern end of the pedestrian footbridge accessing the Shirley Street commuter car park

Platform 1 contains:

- a brick station building (c. 1910) (Figure 1-6), which includes the station master's office and ticketing/waiting room, and a family accessible toilet
- a small shelter with noticeboards and information point (Figure 1-7)
- seating and lighting to the platform
- Opal card reader
- push-button help point
- waste and recycling bins.



Figure 1-6 Ourimbah Station Platform 1 looking north



Figure 1-7 Existing shelter on Platform 1 to the south of the brick station building

Platform 2 contains:

- a timber station building (1887) (Figure 1-8) which has a waiting room and two store rooms on either side of the waiting room
- a signal box building
- a storage building (Figure 1-9)
- seating and lighting to the platform
- push-button help point
- waste and recycling bins
- noticeboard.



Figure 1-8 Looking north along Platform 2, (from left to right) the timber station building, Signal Box Building and Station Master's Residence



Figure 1-9 Storage building on Platform 2, to the south of the station building



Figure 1-10 Looking south along Platform 2

1.3.2. Station buildings

The Ourimbah Railway Station and Stationmaster's House, represent a rare and highly intact grouping of original railway buildings from the nineteenth and early twentieth centuries. The buildings and the importance of their group and setting are described in detail in the accompanying Statement of Heritage Impact (SoHI) (Artefact 2019), and in Section 6.5.

On Platform 1, the brick station building is centrally located on the platform, with a timber veranda extending the entire length of the building (Figure 1-11). The original exterior and interior configuration, and many original features of the building remain substantially intact. A toilet is in the northern end of the building and has recently been upgraded to a Family Accessible Toilet.



Figure 1-11 View of brick station building on Platform 1

On Platform 2, the timber station building with weatherboard cladding is located off-centre, towards the northern end of the platform (Figure 1-8 and Figure 1-12). The building's current use includes a central waiting room with two storage rooms either side of the waiting room. Many of the original features, fittings and fixtures remain intact.



Figure 1-12 View of station building on Platform 2

The timber station building is flanked by separate weatherboard buildings, to the north the Signal Box Building (Figure 1-13), and to the south by the storage building (Figure 1-9). The Signal Box exterior remains in good condition. Internally the signalling frame and fixtures have been removed and it is currently used for storage. The storage building design and exterior is consistent with that of the station building on Platform 2, however external doors are modern and most of the windows have been boarded up. The interior of the building is in poor condition and it is not currently used.



Figure 1-13 View of Signal Box building to north of the timber station building on Platform 2

The Station Masters Residence is a timber framed, weatherboard and corrugated iron clad cottage, located to the north of Platform 2 (Figure 1-8). There is no public access to the residence and the Proposal does not include any changes to this building.

1.3.3. Commuter car park

The Shirley Street commuter car park is located on the eastern side of the station and can be accessed by vehicles from the corner of Brownlee Street and Shirley Street.

The car park is sealed and provides around 150 car parking spaces, including five accessible parking spaces (Figure 1-14 and Figure 1-15). The car park also contains four secure bike lockers and two bicycle racks with space for 12 bicycles. Untimed on-street parking on surrounding streets is also available on the eastern side of the station.

Pedestrian access to Platform 1 and the brick station building is provided via a ramp near the southern end of the car park (Figure 1-14). To the east of the ramp, a separate access stair to the footbridge over the rail lines is currently provided (Figure 1-5 and Figure 1-16).



Figure 1-14 View of commuter car park looking north from the footbridge



Figure 1-15 View of Shirley Street commuter car park looking south from the entry off Shirley Street



Figure 1-16 View from Shirley Street commuter car park looking towards the brick station building and ramp to Platform 1 and the footbridge

1.3.4. Memorial park

A memorial park is located west of the station on RailCorp land. The park contains a World War 1 monument at its entrance, which is listed as a heritage item of local significance in the *Wyong Local Environmental Plan 2013* (Wyong LEP) (I66) (Figure 1-17). A brass plaque on a brick and sandstone plinth commemorating World War 2 is also installed in the park. The park includes a number of mature trees.

The proposed western lift to Platform 2 and new pathway, involve works which will impact on the north-east corner of the memorial park, including the removal of a portion of the sandstone wall, removal of a tree in the north-east corner of the park, and pruning of existing tree canopies.



Figure 1-17 View of entry arch to the memorial park looking south-east towards the footbridge. The tree behind the left pillar of the memorial arch is proposed to be removed

1.3.5. Land uses

Under the Wyong LEP, Ourimbah Station is zoned as SP2 Infrastructure. Similarly, the Pacific Highway, located to the west of the station, is also zoned as SP2 Infrastructure.

The Proposal is located in an area consisting of mixed uses including low and medium density residential, commercial and industrial premises, educational facilities, public recreation, environmental conservation, national parks, and nature reserves land. An extract from the Wyong LEP zoning map can be viewed in Figure 4-1.

Approximately 500 metres to the north-east of the station are the educational establishments of the Ourimbah Campus of University of Newcastle, TAFE NSW and the Central Coast Community College.

Recreation areas located in the vicinity of the Proposal include Bill Sohler Park, Ourimbah Skate Park and Ourimbah Tennis Courts located to the east of the station behind a row of industrial premises on Mill Street.

1.4. Purpose of this Review of Environmental Factors

This REF has been prepared by SNC-Lavalin Atkins on behalf of TfNSW to assess the potential impacts of the Ourimbah Station Upgrade. For the purposes of these works, TfNSW is the proponent and the determining authority under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The purpose of this REF is to describe the Proposal, to assess the likely impacts of the Proposal having regard to the provisions of Section 5.5 of the EP&A Act, and to identify

mitigation measures to reduce the likely impacts of the Proposal. This REF has been prepared in accordance with clause 228 of the Environment Planning and Assessment Regulation 2000 (EP&A Regulation).

This assessment has also considered the relevant provisions of other relevant environmental legislation, including the *Biodiversity Conservation Act 2016* (BC Act), *Fisheries Management Act 1994* (FM Act) and the *Roads Act 1993* (Roads Act).

Having regard to the provisions of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), this REF considers the potential for the Proposal to have a significant impact on matters of National Environmental Significance (NES) or Commonwealth land, and the need to make a referral to the Commonwealth Department of the Environment and Energy for any necessary approvals under the EPBC Act. Refer to Chapter 4 for more information on statutory considerations.

2. Need for the Proposal

Chapter 2 discusses the need and strategic justification for the Proposal, having regard to the objectives of the Transport Access Program and the specific objectives of the Proposal. This chapter also provides a summary of the options that have been considered during development of the Proposal and why the preferred option has been chosen.

2.1. Strategic justification

Improving transport customer experience is the focus of the NSW Government's transport initiatives. Transport interchanges and train stations are the important gateways to the transport system and as such play a critical role in shaping the customer's experience and perception of public transport.

The Ourimbah Station Upgrade Project, the subject of this REF, forms part of the Transport Access Program which is an initiative to provide a better experience for public transport customers by delivering accessible, secure and integrated transport infrastructure. The Proposal would improve accessibility to Ourimbah Station and provide safe and equitable access to the platforms and commuter car park, in line with DDA legislation and DSAPT requirements.

Table 2-1 identifies key NSW government policies applicable to the Proposal as part of the strategic justification. Further details of the application of NSW Government policies and strategies are discussed in Chapter 4 of this REF.

Table 2-1 Key NSW Government policies and strategies applicable to the Proposal

Policy / Strategy	Overview	How the Proposal aligns
Central Coast Regional Plan 2036 (DPIE, 2016)	The <i>Central Coast Regional Plan 2036</i> aims to build a strong economy capable of generating jobs, providing greater housing choice, essential infrastructure, lively centres for shopping, entertainment and dining, and protecting the natural environment. It sets the vision of <i>A healthy natural environment, a flourishing economy and well-connected communities</i> and identifies 4 goals to achieving this.	The proposal aligns with Goal 3 which seeks <i>well-connected communities and attractive lifestyles</i> and includes <i>Direction 18: Create places that are inclusive, well designed and offer attractive lifestyles</i> . Specifically, this direction speaks to making places that are safe and accessible for children, older people and people with a disability. These are goals and directions inherent in the Proposal.
Future Transport Strategy 2056 (TfNSW, 2018a)	<i>Future Transport 2056</i> is an update of NSW's <i>Long-Term Transport Master Plan</i> . It is a suite of strategies and plans for transport to provide an integrated vision for the state. <i>Future Transport 2056</i> identifies 12 customer outcomes for future transport in regional NSW. These outcomes include sustaining and enhancing the liveability of our places and, making services accessible for all customers.	The Transport Access Program is identified in the Strategy as an example of the NSW Government working to improve accessibility of the rail network (outcome 5 of the strategy's vision for transport and outcome 9 of the strategy for future transport in regional NSW). New compliant access paths and lifts would provide a physically accessible and safe network allowing greater choice for people with mobility constraints to access public transport. Greater

Policy / Strategy	Overview	How the Proposal aligns
		accessibility would enhance the liveability of the locality.
NSW State Infrastructure Strategy 2018-2038 (NSW Government, 2018)	<p>The <i>NSW State Infrastructure Strategy 2018–2038</i> builds on the NSW Government’s major long-term infrastructure plans over the last seven years.</p> <p>The strategy sets out the government’s priorities for the next 20 years, and combined with the <i>Future Transport Strategy 2056</i>, the <i>Greater Sydney Region Plan</i> and the <i>Regional Development Framework</i>, brings together infrastructure investment and land-use planning for our cities and regions.</p> <p>Public transport is viewed as critical to urban productivity, expanding employment opportunities by connecting people to jobs, reducing congestion, and supporting delivery of urban renewal.</p>	<p>The Proposal supports investment in rail infrastructure and aligns with the need to continue to provide urban public transport to support increasing population.</p> <p>The Proposal is also consistent with overall aims and objectives of the <i>Future Transport Strategy 2056</i> to improve transport infrastructure across NSW.</p>
Building Momentum – State Infrastructure Strategy 2018-2038 (Infrastructure NSW, 2018)	<p>The <i>State Infrastructure Strategy 2018-2038</i> makes recommendations for each of NSW’s key infrastructure sectors including transport.</p> <p>The strategy identifies the Central Coast as the State’s fastest growing corridor and the need to improve passenger rail services to Sydney and Newcastle to allow residents to access a wider variety of jobs and business opportunities in both cities.</p>	<p>The proposal would provide for increased rail use and improve accessibility to a wider range of customers including the elderly and less mobile.</p>
Disability Inclusion Action Plan 2018-2022 (TfNSW, 2017)	<p>The <i>Disability Inclusion Action Plan 2018-2022</i> was developed by TfNSW in parallel with the development of <i>Future Transport Strategy 2056</i>, and in consultation with the Accessible Transport Advisory Committee, which is made up of representatives from peak disability and ageing organisations within NSW. The Plan places the needs of the customer at the centre of planning and decision-making for the transport system. This means delivering high quality services to all customers including those with disability.</p> <p>A key action of the Plan is to continue the roll out of the Transport Access Program to increase accessibility to stations on the basis of prioritised need.</p>	<p>The Transport Access Program has been identified in this Plan as a key action to ensure transport networks in Sydney are accessible for all potential Users.</p> <p>The Proposal has been developed in consideration of the objectives outlined in this Plan.</p> <p>The Proposal would assist in achieving the objectives of the Disability Inclusion Action Plan, as it seeks to improve and provide equitable access to public transport facilities.</p>

Policy / Strategy	Overview	How the Proposal aligns
NSW government's key policy priorities.	<p>The NSW government have announced five key policy priorities:</p> <ul style="list-style-type: none"> • A strong economy • Highest quality education • Well-connected communities with quality local environments • Putting customers at the centre of everything we do • Breaking the cycle of disadvantage 	<p>The TAP objectives highlight the importance of infrastructure and place and put the customer at the centre of everything. This aligns directly with the priority for well-connected communities with quality local environments.</p>

2.2. Objectives of the Transport Access Program

The Transport Access Program is a NSW Government initiative to provide a better experience for public transport customers by delivering accessible, modern, secure and integrated transport infrastructure. The program aims to provide:

- stations that are accessible to people with a disability, are less mobile, parents/carers with prams and customers with luggage
- modern buildings and facilities for all modes that meet the needs of a growing population
- modern interchanges that support an integrated network and allow seamless transfers between transport modes for all customers
- safety improvements including extra lighting, help points, fences and security measures for car parks and interchanges, including stations, bus stops and wharves
- signage improvements so customers can more easily use public transport and transfer between modes at interchanges

2.3. Objectives of the Proposal

The proposal seeks to address the objectives of the Transport Access Program and current non-compliances at Ourimbah Station in relation to DSAPT requirements.

The specific objectives of the Proposal are to:

- provide a station that is accessible to people with a disability, limited mobility, parents/carers with prams and customers with luggage
- improve customer experience and amenity (including equitable access to the station and waiting rooms, improved station pathways and visual appearance)
- improve integration with surrounding precinct by providing an accessible path of travel from the station to the existing DDA spaces and from the station to the bus stop on the Pacific Highway
- improve customer safety through additional lighting and CCTV cameras as required
- improved wayfinding in and around the station
- minimise impacts to the heritage features of the station.

2.4. Options considered

The options for improving access to Ourimbah Station were developed following workshops and assessment by TfNSW and key stakeholders.

Two options, in addition to the 'do-nothing' option, were developed to address accessibility needs and desirable upgrades to provide improved customer outcomes. The two options, both provided two new lifts to connect Platform 1 and Platform 2 via the existing footbridge. The two options differed only in the proposed location of the western lift and stairs providing access from Platform 2 to the footbridge.

2.4.1. Option 1 and Option 2

Option 1: installation of a new path from Platform 1, along the eastern side of the existing footbridge stair, and a lift connecting to the northern side of the footbridge. Installation of a lift to the west end of the existing footbridge, with an encroachment into the memorial park to accommodate the lift position and a new access path to the Station entrance and Platform 2.

Option 2: installation of a new path from Platform 1, along the eastern side of the existing footbridge stair, and a lift connecting to the northern side of the footbridge. Removal of the existing stair from Platform 2 to the western end of the footbridge, and installation of a lift to the northern side of the existing footbridge. Installation of a new stair connecting the footbridge to Platform 2.

2.4.2. The 'do-nothing' option

Under a 'do-nothing' option, existing access to the platforms, station buildings (including waiting rooms and toilet), footbridge and car park would remain the same and there would be no changes to the way the station and surrounding area currently operates.

The NSW Government has identified the need for improving the accessibility of transport interchanges, train stations and commuter car parks across NSW as a priority under the Transport Access Program.

The 'do-nothing' option was not considered a feasible alternative as it would not meet the DDA and DSAPT requirements. A 'do nothing' option would not assist in encouraging the use of public transport or meet the current and anticipated future needs of the Ourimbah community.

2.5. Justification for the preferred option

The design options were assessed in a multi-criteria analysis (MCA) workshop with relevant stakeholders. The MCA included consideration of factors such as accessibility, customer experience, transport integration, urban design and precinct planning, operation and maintenance, infrastructure, deliverability, sustainability, heritage and environmental constraints, to select a preferred option.

Option 2 was selected as the preferred option, receiving the highest scores in the qualitative criteria. Option 2, with the provision of a lift to the north of the existing footbridge, reduces the impact on the locally heritage listed memorial park and the existing trees, and met the requirements for operation and maintenance. On this basis, Option 2 was selected as the preferred option and is assessed in this REF.

3. Proposal description

Chapter 3 describes the Proposal and summarises key design parameters and construction methodology. The description of the Proposal is based on a concept design for the preferred option and is subject to detailed design.

3.1. Scope of works

As described in Section 1.1, the Proposal involves an upgrade of Ourimbah Station as part of the Transport Access Program to improve accessibility and amenity for customers.

The scope of work for the Proposal is described below.

New lifts to existing footbridge

Works on the new lifts to the footbridge would comprise:

- installation of two new lifts connecting to the existing footbridge. Works would include:
 - demolition of existing stairs at the western end of the footbridge to accommodate a new lift, and construction of new staircase (this may include installing a temporary staircase)
 - installation of a lift, including lift landings, attached to the western end of the footbridge connecting to Platform 2 (refer Figure 3-3)
 - installation of a lift, including lift landings, attached to the middle section of the footbridge connecting to Platform 1 (refer Figure 3-2)
 - construction of a retaining wall and path to provide an accessible path of travel between the lift landing and Platform 1 (refer Figure 3-2)
 - removal and trimming of vegetation as required to accommodate new infrastructure
 - removal of intermediate sandstone bollards from the heritage listed gate, and part of the sandstone wall to allow for an accessible path of travel to the lift.
- retention of the existing footbridge with minor modifications which would include:
 - upgrade works, including removal of a portion of the existing footbridge balustrades to allow for landings to the lifts and replacement of stair treads and handrails
 - installation of anti-throw screens to new lift landings and new stair.

Pacific Highway station entrance

Upgrades to the Pacific Highway entrance would include:

- a new accessible station entrance beside the western lift area, which would include demolition of fencing and landscaping at the base of the stairs to provide direct access to Platform 2
- demolition of the existing switch-back ramp, fencing, balustrade and handrail
- installation of a new ramp that provides access from street level to the lift area including a retaining wall
- replacement of the existing stairs, balustrade and handrail that provides access from street level to Platform 2

- new landscaping at the station entrance.

Shirley Street commuter car park

Upgrades to the Shirley Street commuter car park entrance would include:

- demolition of the existing ramp and associated fencing
- installation of a new ramp and fencing from the Shirley Street commuter car park to Platform 1, and re-grading to provide an accessible path of travel between the DDA spaces and the new ramp.

Modifications to station buildings and platforms

Upgrades to the station buildings would include:

- widening of door and lowering the floor to provide level access to the waiting room on Platform 1
- providing two wheelchair waiting areas within the waiting room on Platforms 1 and 2
- removal of furniture on Platform 1 to provide compliant accessible path of travel along the platform
- removal of the freestanding chemical storage locker from the Family Accessible Toilet on Platform 1
- modifying southern access point to the waiting room on Platform 2
- minor platform resurfacing along sections of Platform 2 to provide an accessible path of travel along the Platform
- line marking for the boarding assistance zones (BAZ).

Ancillary works

- upgrades to lighting and closed-circuit television (CCTV) cameras to provide coverage to meet security standards for new infrastructure
- upgrades to the public address system, including relocating existing speakers and extending the system to the new lift areas
- other work including installation of new opal card readers and relocation of existing opal card readers, upgrades to telephones, landscaping, drainage works, wayfinding signage, relocation of bins and furniture.
- new or reinstatement of TGSIs where required
- protection or relocation of services and utilities
- electrical upgrades to support new infrastructure.

A temporary construction compound would be required for laying down equipment and machinery, parking plant and vehicles, and storage of materials. The temporary construction compound area proposed is to the south of the footbridge and east of the rail lines. This area is identified as the Ancillary Facilities in Figure 1-2 and addressed in Section 3.3.7.

Figure 3-1 shows the general location of key elements of the Proposal. Additional details for the lift locations are shown in Figure 3-2 and Figure 3-3.

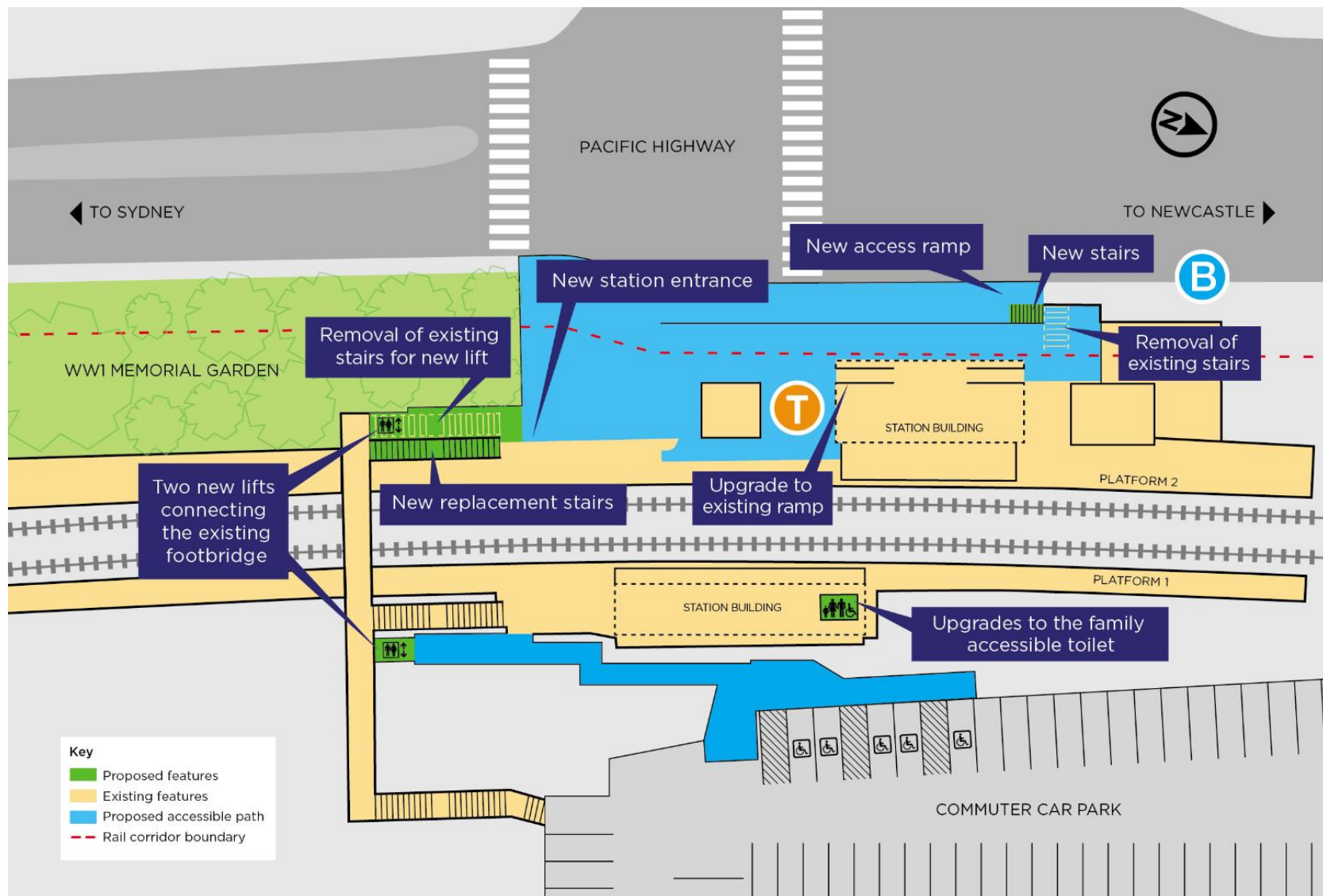


Figure 3-1 Key features of the Proposal (indicative only, subject to detailed design)



Figure 3-2 Location of lift servicing Platform 1 indicated by the dashed red line. The need for a retaining wall and a path to link to Platform 1 (dashed blue line) is evident in the image.



Figure 3-3 The proposed lift servicing Platform 2 to be located in the position of the existing stairs. A section of the sandstone wall in the right foreground is proposed to be removed.



Figure 3-4 Existing non-compliant ramp to the timber station building on Platform 2

3.1.1. 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 can be readily sourced, and that the structures can be built with ease and efficiency. Materials are also selected for their application based on their suitability for meeting design requirements.

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

- lift shaft – ribbed concrete (natural grey in colour)
- lift door, control button and indicator – polished stainless steel.
- lift glazing – clear glass
- lift canopy over waiting areas – metal sheet roofing (charcoal grey in colour)
- lift ventilation louvre – horizontal storm proof louvre, (charcoal grey in colour)
- lift roof – metal roof sheeting, charcoal grey in colour

- access ramp – concrete base, brick and stainless-steel balustrade with stainless steel hand rails
- stairs – concrete base, brick and stainless-steel balustrade with stainless steel handrails and non-slip tread (as per existing)
- platform regrading – asphalt or concrete (as per existing), materials to match existing and achieve compliance
- footpaths – concrete with non-slip textured finish
- retaining wall – brick.

The design of works would be submitted to TfNSW's Design Review Panel at various stages for comment before being accepted by TfNSW. 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 TfNSW.

3.2. Design development

3.2.1. Engineering and environmental constraints

There are a number of constraints which have influenced the design development of the Proposal.

Existing structures: the accessibility, placement and integrity of existing structures (such as the stairs, ramps, station buildings, platform, and the footbridge) were considered in the scoping design report and during the development of the concept design plans.

Heritage: Ourimbah Station is listed on the RailCorp (Sydney Trains) Section 170 Heritage and Conservation Register (Item 4801030) and the heritage schedule of the Wyong LEP (Item 161). Ourimbah Station is considered a rare and highly intact grouping of original railway buildings from the late nineteenth and early twentieth century. The grouping is outstanding because of their condition and intactness, largely maintaining their historic setting. More information on how heritage has been considered as part of the design development is included in Section 6.5.

Asset Standards Authority (ASA), Sydney Trains and NSW TrainLink requirements: modifications to existing structures and new structures within the rail corridor must be designed and constructed with consideration of train impacts, structural clearances to the track, and safe working provisions.

Extension of the existing footbridge, installation of the new lifts, construction of the new DSAPT compliant paths and entrances, and upgrades to stairs is required to be undertaken in a way that allows the station to continue to operate during construction.

Construction access: Construction access is a constraint for the Proposal. The Proposal may involve additional night works (beyond planned track shutdowns) to complete works restricted by the need to provide public access during train operations.

The impacts of these construction access constraints, and appropriate mitigation measures, are addressed in Sections 6.1 and 6.3.

Public access: Public access is to be maintained throughout construction of the station upgrade. Maintaining pedestrian entry to the station during construction requires careful

consideration, in particular to address the construction of the entry from the Pacific Highway, and the footbridge extensions and lift installations.

3.2.2. Design standards

The Proposal would be designed having regard to the following design standards:

- *Disability Standards for Accessible Public Transport 2002* (issued under the Commonwealth *Disability Discrimination Act 1992*)
- National Construction Code
- relevant Australian Standards
- Asset Standards Authority standards
- Infrastructure Sustainability Council of Australia (ISCA) Infrastructure Sustainability (IS) Rating Scheme (v1.2)
- TfNSW Urban Design Guidelines
- Sydney Trains Standards, Publications, Manuals, Specifications, Technical Notes and Procedures
- *Guidelines for the Development of Public Transport Interchange Facilities* (Ministry of Transport, 2008).
- Crime Prevention Through Environmental Design (CPTED) principles
- other TfNSW policies and guidelines
- relevant council standards.

3.2.3. Sustainability in design

The Proposal would be rated using the Infrastructure Sustainability Council of Australia (ISCA) Infrastructure Sustainability (IS) Rating Scheme (v1.2). The rating scheme provides an independent and consistent methodology for the application and evaluation of sustainability outcomes in infrastructure projects. The sustainability outcomes address environmental, social, economic and governance aspects.

The IS Rating Scheme is grouped into six key themes:

- management and governance
- using resources
- emissions, pollution and waste
- ecology
- people and place
- innovation.

These sustainability themes are divided into 15 performance categories, against which the Proposal would be independently assessed and assigned a rating level. The Proposal is targeting an 'Excellent' under IS Rating Scheme version 1.2.

3.3. Construction activities

3.3.1. Work methodology

Subject to approval, construction is expected to commence in the third quarter (Q3) of 2020 and take around 18 months to complete. The construction methodology would be further developed during the detailed design of the Proposal by the nominated Construction Contractor in consultation with TfNSW.

The proposed construction activities for the Proposal are identified in Table 3-1. This staging is indicative and is based on the current concept design and may change once the detailed design methodology is finalised.

Table 3-1 Indicative construction staging for key activities

Stage	Activities	Timeframe
Stage 1 – site establishment and enabling works	<ul style="list-style-type: none"> establish construction compound (erect fencing, site offices, amenities and plant/material storage areas) relocate/upgrade services/utilities where required install safety barriers and hoarding around the nominated work zones and establish pedestrian paths for use during construction. install tree protection measures within the memorial park install temporary stair from Platform 2 to footbridge (if required). 	Standard hours Out-of-Hours Work Period 1 (OOHW 1) ¹ Out-of-Hours Work Period 2 (OOHW 2) ¹
Stage 2 – electrical and communications	<ul style="list-style-type: none"> install conduits, pits, transformer, cabling, and new distribution board. 	Standard hours
Stage 3 – construction work (Footbridge, Stairs, Lifts and Ramps works)	<ul style="list-style-type: none"> remove fencing, demolish ramps and stairs from the Pacific Highway and ramp from Shirley Street commuter car park, to allow for construction of new accessible paths demolish existing stair to western side of footbridge excavate for lift pits, ramp and stair foundations form, install reinforcing, and pour lift pits, retaining walls and ramps install lift towers and lighting install new stair from Platform 2 to footbridge. 	Standard hours 48 hr rail shutdown OOHW 1 OOHW 2
Stage 4 – construction work (Building and Platform Works)	<ul style="list-style-type: none"> install new paths and regrade platforms removal of step and widening of door to waiting room on Platform 1. 	Standard hours 48 hr rail shutdown OOHW 1 OOHW 2

Stage	Activities	Timeframe
Stage 5 – installation and finishing	<ul style="list-style-type: none"> stair and balustrade modifications install of lift components install other ancillary lighting, communications and security new fencing to accessible paths and to prevent access under stairways relocate and install new furniture line marking, painting, wayfinding signage, tactile ground surface indicators (TGSIs). 	Standard hours 48 hr rail shutdown OOHW 1 OOHW 2
Stage 6 – testing and commissioning	<ul style="list-style-type: none"> test all new systems commission the lift defect resolution. 	Standard hours
Stage 7 – demobilisation	<ul style="list-style-type: none"> remove all construction hoardings/temporary fencing remove site compound and clear site remove environmental, safety and traffic controls. 	Standard hours OOHW 1 OOHW 2

Note 1 - Work outside of standard construction hours is defined as Out-of-Hours Work (OOHW) and can be divided into two periods of sensitivity. OOHW Period 1 is defined as Monday to Saturday 6:00pm to 10:00pm, Saturday 7:00am to 8:00am and 1:00pm to 10:00pm, and Sunday and public holidays 8:00am to 6:00pm. OOHW Period 2 is defined as Monday to Saturday 10:00pm to 7:00am (nights) and Sundays and public holidays 6:00pm to 8:00am (nights).

3.3.2. Plant and equipment

An indicative list of plant and equipment that would be required is provided below. Additional equipment that would likely to be used would be identified during detailed design by the Construction Contractor.

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> power tools (e.g. drill, hammer drill, saw, grinder torque and impact wrenches) demolition saw coring machine jack hammer mobile crane elevated work platform, scissor lift generator nail gun | <ul style="list-style-type: none"> hi-rail plant (e.g. rail mounted elevated work platform, flatbed, hiab, excavators, piling rig dump trucks) bobcat forklift hydraulic/rock saw paving machine vibratory roller / compaction plate | <ul style="list-style-type: none"> trucks (various types and sizes e.g. skip trucks, suction truck, hiab for deliveries) lighting towers water cart rattle gun rubber tyred excavators, piling rigs concrete pump and truck |
|---|--|---|

3.3.3. Working hours

The Proposal would be undertaken during recommended standard (NSW) Environment Protection Authority (EPA) construction hours, which are as follows:

- 7.00 am to 6.00 pm Monday to Friday
- 8.00 am to 1.00 pm Saturdays
- no work on Sundays or public holidays.

Certain works may need to occur outside recommended standard hours and would include night works and works during routine rail shutdowns, which are scheduled closures that would occur regardless of the Proposal when part of the rail network is temporarily closed for maintenance and trains are not operating.

Out of hours works (OOHW) are required for some activities to minimise disruptions to customers, pedestrians, motorists and nearby sensitive receivers; and to ensure the safety of railway workers and operational assets. . OOHW and can be divided into two periods of sensitivity. OOHW Period 1 is defined as Monday to Saturday 6:00pm to 10:00pm, Saturday 7:00am to 8:00am and 1:00pm to 10:00pm, and Sunday and public holidays 8:00am to 6:00pm. OOHW Period 2 is defined as Monday to Saturday 10:00pm to 7:00am (nights) and Sundays and public holidays 6:00pm to 8:00am (nights). It is estimated that approximately six rail shutdowns would be utilised to facilitate the following activities:

- relocate utilities
- piling works, drainage, and installation of lifts
- removal and reinstatement of handrail and stairs to footbridge
- reinstate utilities.

Out of hours works may also be scheduled outside rail shutdown periods. Approval from TfNSW would be required for any out of hours work and the affected community would be notified as outlined in the TfNSW *Construction Noise and Vibration Strategy* (CNVS) (TfNSW, 2019a) (refer to Section 6.3 for further details).

3.3.4. Earthworks

Excavations and earthworks would generally be required for the following:

- lift pits
- the Pacific Highway entrance and construction of new accessible paths
- other minor civil work.

Excavated material would be reused onsite where possible or managed in accordance with relevant legislative requirements. Demolished concrete paths, ramps and stairs, and redundant balustrades will be removed from the site. It is estimated that less than 50 cubic metres of excavated soil would be generated by path regrading and excavation of the lift pits, and that most of this material can be reused in path regrading.

3.3.5. Source and quantity of materials

The source and quantity of materials would be determined during the detailed design phase of the Proposal and would consider the requirements of the ISCA v1.2. Materials would be sourced from local suppliers where practicable. Reuse of existing and recycled materials would be undertaken where practicable.

3.3.6. Traffic access and vehicle movements

Traffic and transport impacts associated with the Proposal, as well as impacts on pedestrian movements and access, are assessed in Section 6.1 of this REF. The potential traffic and access impacts expected during the construction of the Proposal include:

- increased construction vehicle traffic, including light and heavy vehicles within the station precinct and local streets
- temporary increased demand for all-day parking for construction staff
- loss of commuter car parking during construction of the new accessible pathways within the Shirley Street commuter car park
- temporary detours and disruptions to pedestrian movements in and around the station.

A detailed construction methodology and associated management plans, including a Construction Environmental Management Plan (CEMP), would be developed prior to commencement of the Proposal to manage potential traffic and access impacts.

3.3.7. Ancillary facilities

A temporary construction compound would be needed to accommodate a site office, amenities, laydown and storage area for materials. An area for a construction compound has been proposed to the south of the footbridge within the rail corridor. This area is identified as the Ancillary Facilities in Figure 3-5. Impacts associated with utilising this area have been considered in the environmental impact assessment.

An existing hi-rail access pad which spans the rail lines adjacent to the construction compound (visible in Figure 3-5), would be used for hi-rail construction vehicles to access the rail line during rail shutdowns.

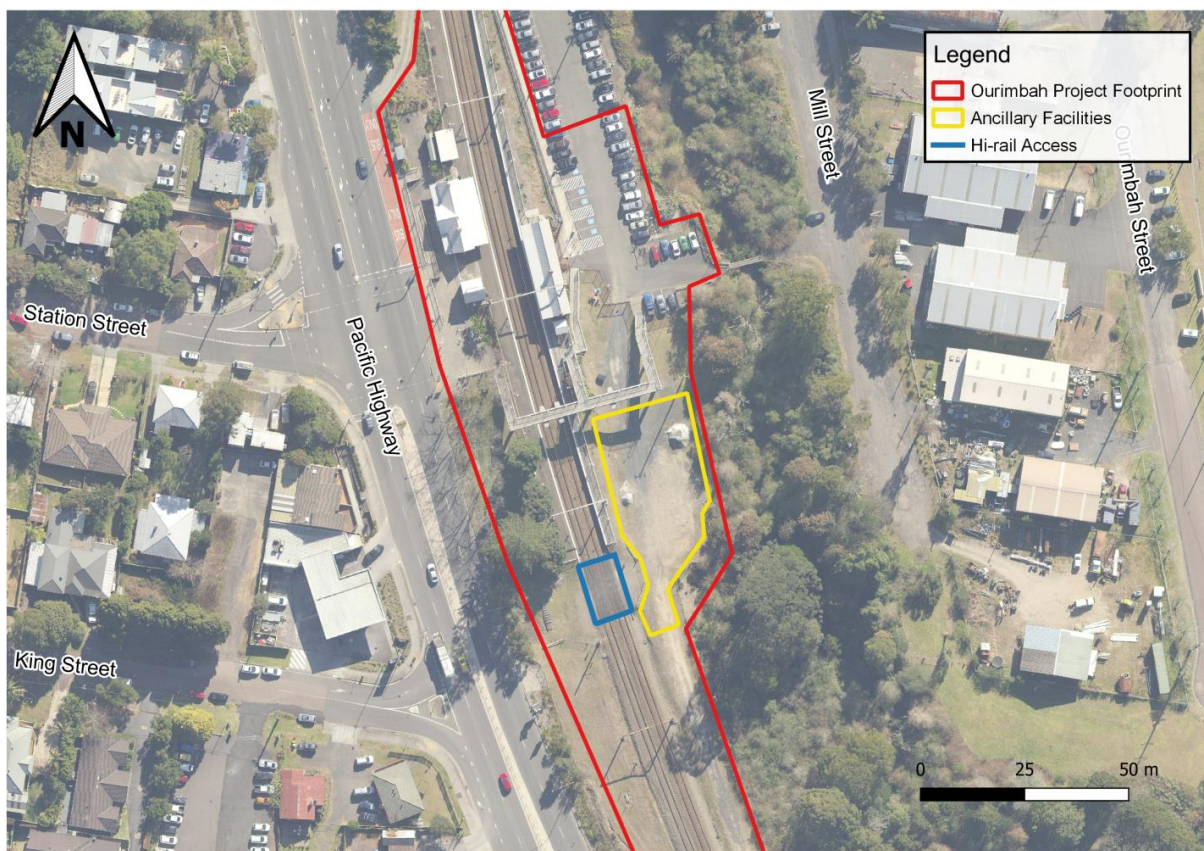


Figure 3-5 Location of proposed temporary construction compound area (yellow). The hi-rail access pad, adjacent the construction compound, is visible as the dark area obscuring the rail lines.



Figure 3-6 Proposed construction compound area and hi-rail vehicle access pad to the south of the footbridge (left), and proposed entry to the compound from the Shirley Street commuter car park (right)

3.3.8. Public utility adjustments

A dial before you dig (DBYD) investigation was completed during the concept design development. Implications from the proposed scope of works were identified for existing low voltage lines, communications, station data and CCTV.

An upgrade of the Ausgrid power supplies to the station would be required to service the new lifts. The works would include an upgrade of the distribution boards from 'single phase' to 'three phase' power, the decommissioning of the existing transformers and installation of new transformers, low voltage cable installations to connect both sides of the station, and upgrades to circuit breakers, switches and wiring to support three-phase supply.

The proposed lift locations will impact existing underground low voltage cables that would need to be relocated. However, the proposed lifts, and crane operations to install them, are not expected to impact on existing aerial power supplies.

Relocation of communications cables and drainage and stormwater would be required for the regrading and construction of the new paths and ramps.

3.4. Property acquisition

TfNSW does not propose to acquire any property as part of the Proposal.

The works in the Pacific Highway road reserve to demolish the stairs and ramp, regrade the footway, relocate the bus shelter, and alter signage would be carried out pursuant to the exemption from Section 138 of the *Roads Act 1993* provided in Clause 5 of Schedule 2 of the *Roads Act 1993*.

3.5. Operation and maintenance

The future operation and maintenance would be subject to discussions with Sydney Trains, NSW TrainLink, TfNSW and CCC.

Operation of the train services would remain with NSW TrainLink, while maintenance of the station assets within the rail corridor, including access paths, station facilities and the lifts would be the responsibility of Sydney Trains.

4. Statutory considerations

Chapter 4 provides a summary of the statutory considerations relating to the Proposal including a consideration of NSW Government policies/strategies, NSW legislation (particularly the EP&A Act), environmental planning instruments, and Commonwealth legislation.

4.1. Commonwealth legislation

4.1.1. Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places - defined in the EPBC Act as 'matters of National Environmental Significance'. The EPBC Act requires the assessment of whether the Proposal is likely to significantly impact on matters of NES or Commonwealth land. These matters are considered in full in Appendix A.

The Proposal would require removal of any trees or any vegetation listed under the EPBC Act.

No matters of National Environmental Significance or Commonwealth land are identified as being impacted by the Proposal. Therefore, a referral to the Commonwealth Minister for the Environment is not required.

4.1.2. Other Commonwealth legislation

Table 4-1 discusses other relevant Commonwealth legislation applicable to the Proposal.

Table 4-1 Other Commonwealth legislation applicable to the Proposal

Applicable legislation	Considerations
<i>Aboriginal and Torres Strait Islander Heritage Protection Act 1984</i>	<p>There is an obligation on a person who discovers anything which he or she has reasonable grounds to suspect are Aboriginal remains to report that discovery to the Minister, giving particulars of the remains and their location.</p> <p>There are no known sites at this location. However, if unexpected archaeological items or items of Aboriginal heritage significance are discovered during the construction of the Proposal, all works would cease, and appropriate advice sought as per the TfNSW <i>Unexpected Heritage Finds Guideline</i> (TfNSW, 2019b).</p>
<i>Disability Discrimination Act 1992</i> (DDA Act)	<p>The DDA aims to eliminate as far as possible, discrimination against persons on the ground of disability in areas including access to premises and the provision of facilities, services and land.</p> <p>The Proposal would be designed having regard to the requirements of the DDA.</p>

4.2. NSW legislation and regulations

4.2.1. Transport Administration Act 1988

The *Transport Administration Act 1988* establishes TfNSW as a public authority who is to exercise its functions in a manner that promotes certain common objectives, including to promote the delivery of transport services in an environmentally sustainable manner.

This REF has been prepared having regard to, among other things, the objectives of TfNSW under the *Transport Administration Act 1988*, including:

2A Objects of Act

...

- (a) *to provide an efficient and accountable framework for the governance of the delivery of transport services,*
- (b) *to promote the integration of the transport system,*
- (c) *to enable effective planning and delivery of transport infrastructure and services,*
- (d) *to facilitate the mobilisation and prioritisation of key resources across the transport sector,*
- (e) *to co-ordinate the activities of those engaged in the delivery of transport services,*
- (f) *to maintain independent regulatory arrangements for securing the safety of transport services*

2B Common objectives and service delivery priorities of public transport agencies

...

- (a) **Environmental sustainability**
To promote the delivery of transport services in an environmentally sustainable manner.
- (b) **Social benefits**
To contribute to the delivery of social benefits for customers, including greater inclusiveness, accessibility and quality of life.

4.2.2. Environmental Planning and Assessment Act 1979

The EP&A Act establishes the system of environmental planning and assessment in NSW. This Proposal is subject to the environmental impact assessment and planning approval requirements of Division 5.1 of the EP&A Act. Division 5.1 specifies the environmental impact assessment requirements for activities undertaken by public authorities, such as TfNSW, which do not require development consent under Part 4 of the Act.

In accordance with Section 5.5 of the EP&A Act, TfNSW, as the proponent and determining authority, must examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the Proposal.

Clause 228 of the EP&A Regulation prescribes the minimum factors which must be considered when determining if an activity assessed under Division 5.1 of the EP&A Act has or is likely to have a significant effect on the environment. Chapter 6 of the REF provides an environmental impact assessment of the Proposal in accordance with clause 228 and Appendix B specifically responds to the factors for consideration under clause 228.

4.2.3. Other NSW legislation and regulations

Table 4-2 provides a list of other relevant legislation applicable to the Proposal.

Table 4-2 Other NSW legislation applicable to the Proposal

Applicable legislation	Considerations
<i>Biodiversity Conservation Act 2016</i> (BC Act)	<p>Under Section 2.4 of the BC Act it is an offence to damage the habitat of a threatened species or threatened ecological community, as listed in Schedule 1 and 2 of the Act.</p> <p>The Proposal would not require removal of any trees or vegetation, nor affect any threatened flora species.</p> <p>The Proposal was considered highly unlikely to result in significant impacts to any threatened species (Refer to Section 6.6).</p>
<i>Biosecurity Act 2015</i>	<p>Clause 22 requires any person who deals with a biosecurity matter has a duty to ensure that in so far as is reasonably practicable, the potential biosecurity risk is prevented, eliminated or minimised. Appropriate management methods would be implemented during construction if declared noxious weeds in the CCC LGA are identified (refer to Section 6.6).</p>
<i>Contaminated Land Management Act 1997</i> (CLM Act)	<p>The CLM Act regulates significantly contaminated land through requirements for notification to the EPA, investigation, remediation and recovery of costs from the person responsible</p> <p>The NSW Environment Protection Authority (EPA) must be notified by the property owner in writing of any contamination identified within the proposal site in accordance with the requirements of Section 60 of the Act.</p> <p>The site has not been declared as a contaminated site under the CLM Act (refer to Section 6.8).</p>
<i>Heritage Act 1977</i> (Heritage Act)	<p>Sections 57 and 60 require approval for works which may have an impact upon items listed on the State Heritage Register.</p> <p>Sections 139 and 140 similarly require approval where relics are likely to be exposed.</p> <p>For any works which may have an impact upon items listed on a Section 170 heritage and conservation register maintained by a government agency, notification to the Heritage Division may be required where demolition to the item is proposed, or where the item will no longer be occupied.</p> <p>'Ourimbah Railway Station & Station Master's House', and the 'WW1 Monument' are listed as items of local heritage significance in the Wyong LEP 2013. 'Ourimbah Railway Station Group and Residence' are also listed in the NSW Transport RailCorp s170 heritage register (refer Section 6.5).</p>
<i>Protection of the Environment Operations Act 1997</i> (PoEO Act)	<p>The Proposal does not involve a 'scheduled activity' under Schedule 1 of the PoEO Act. Accordingly, an Environment Protection Licence (EPL) is not required for the Proposal.</p> <p>However, in accordance with Part 5.7 of the PoEO Act, TfNSW would notify the EPA of any pollution incidents that occur onsite. This would be managed through the CEMP to be prepared and implemented by the Construction Contractor.</p>

Applicable legislation	Considerations
<i>Roads Act 1993</i> (Roads Act)	<p>Section 138 of the Roads Act requires consent from the relevant road authority for the carrying out of work in, on or over a public road.</p> <p>The Proposal would involve work within the Pacific Highway reserve to demolish the stairs and ramp, regrade the footway, relocate the bus shelter, and alter signage. The Pacific Highway is a classified State Road under the control of TfNSW. Concurrence within TfNSW will be required for the works within the classified road corridor (refer to Section 6.1).</p> <p>Road Occupancy Licences would be obtained for construction work that is likely to impact the operations of the Pacific Highway (e.g. lane closures) (see Section 6.1 for more information).</p>
<i>Waste Avoidance and Resource Recovery Act 2001</i> (WARR Act)	TfNSW would carry out the Proposal having regard to the requirements of the WARR Act. A site-specific Waste Management Plan would be prepared.
<i>Water Management Act 2000</i> (WM Act)	<p>Approval under the WM Act is required for certain types of developments and activities that are carried out in or near a river, lake or estuary, or may intersect groundwater. Under Section 91F of the WM Act, it is an offence to carry out an activity that would interfere with an aquifer unless a controlled activity approval has been issued.</p> <p>The proposal is not considered to give rise to any activities that will adversely impact surface waterbodies or groundwater.</p>

4.2.4. Key State Environmental Planning Policies

State Environmental Planning Policy (Infrastructure) 2007

The Infrastructure SEPP is the key environmental planning instrument which determines the permissibility of an infrastructure proposal and under which part of the EP&A Act an activity or development may be assessed.

The Infrastructure SEPP prevails over all other environmental planning instruments except where there is an inconsistency with *State Environmental Planning Policy (State Significant Precincts) 2005* or certain provisions of *State Environmental Planning Policy (Coastal Management) 2018*.

Division 15, Clause 79 of the Infrastructure SEPP allows for the development of 'rail infrastructure facilities' by or on behalf of a public authority without consent on any land (i.e. assessable under Part 5 of the EP&A Act). Clause 78 defines 'rail infrastructure facilities' as

including elements such as 'railway stations, station platforms and areas in a station complex that commuters use to get access to the platforms', 'public amenities for commuters', 'associated public transport facilities for railway stations', 'cuttings', 'fences', 'bridges', 'pedestrian and cycleway facilities'.

Consequently, development consent is not required for the Proposal which is classified as a rail infrastructure facility, however the environmental impacts of the Proposal have been assessed under the provisions of Part 5, Division 5.1 of the EP&A Act.

Clause 13 outlines requirements for consultation with councils, where development impacts on council related infrastructure or services. This is discussed further in Section 5.2.

State Environmental Planning Policy 55 – Remediation of Land

State Environmental Planning Policy No.55 — Remediation of Land (SEPP 55) provides a State-wide approach to the remediation of contaminated land for the purpose of minimising the risk of harm to the health of humans and the environment. While consent for the Proposal is not required, the provisions of SEPP 55 have still been considered in the preparation of this REF.

Section 6.8 of this REF contains an assessment of the potential contamination impacts of the Proposal. It is unlikely that any large-scale remediation (Category 1) work would be required as part of the Proposal. The proposed land use would not differ to the existing use and would, therefore be, unlikely to be affected by any potential contaminants that exist within the rail corridor.

4.2.5. Wyong Local Environmental Plan 2013

The Proposal is located within the Central Coast LGA. The Wyong LEP remains the in-force LEP for the LGA.

The Infrastructure SEPP prevails over all other environmental planning instruments (such as LEPs) except where there is an inconsistency with *State Environmental Planning Policy (State Significant Precincts) 2005* or certain provisions of *State Environmental Planning Policy (Coastal Management) 2018*. However, despite the Infrastructure SEPP prevailing over the Wyong LEP, the consistency of the Proposal with the provisions of Wyong LEP was considered during the preparation of this REF (refer Table 4-3).

The rail corridor is zoned SP2 (Rail Infrastructure Facility), and the Pacific Highway corridor to the west is also zoned SP2 (Road). Refer Figure 4-1.

Table 4-3 Relevant provisions of the Wyong LEP 2013

Provision description	Relevance to the Proposal
Clause 1.2 – Aims of the Plan	<p>The aims of the Wyong LEP include:</p> <ul style="list-style-type: none"> to promote the efficient and equitable provision of public services, infrastructure and amenities, to promote a high standard of urban design that responds appropriately to the existing or desired future character of areas to apply the principles of ecologically sustainable development to guide future development within Wyong to encourage development that increases public transport patronage, walking and cycling.
Part 2 – Zone objectives and land use table	<p>The station and the associated rail corridor is zoned SP2 Infrastructure (Rail Infrastructure Facility). The objectives of the zone include to provide for infrastructure and related uses, and to recognise existing railway land and to enable future development for railway and associated purposes.</p>
5.10 – Heritage Conservation	<p>The objective of this clause is to conserve environmental heritage, including to conserve the heritage significance of heritage items, associated fabric, settings and views</p> <p>.As Ourimbah Station is listed as an item of local heritage significance under the Wyong LEP, development consent would normally be required for the proposed demolition and alterations to the station. However, as the ISEPP prevails over the Wyong LEP (discussed in 4.2.4 above and 5.2 below), the Proposal is permissible without development consent. Accordingly, consent from CCC is not required.</p>

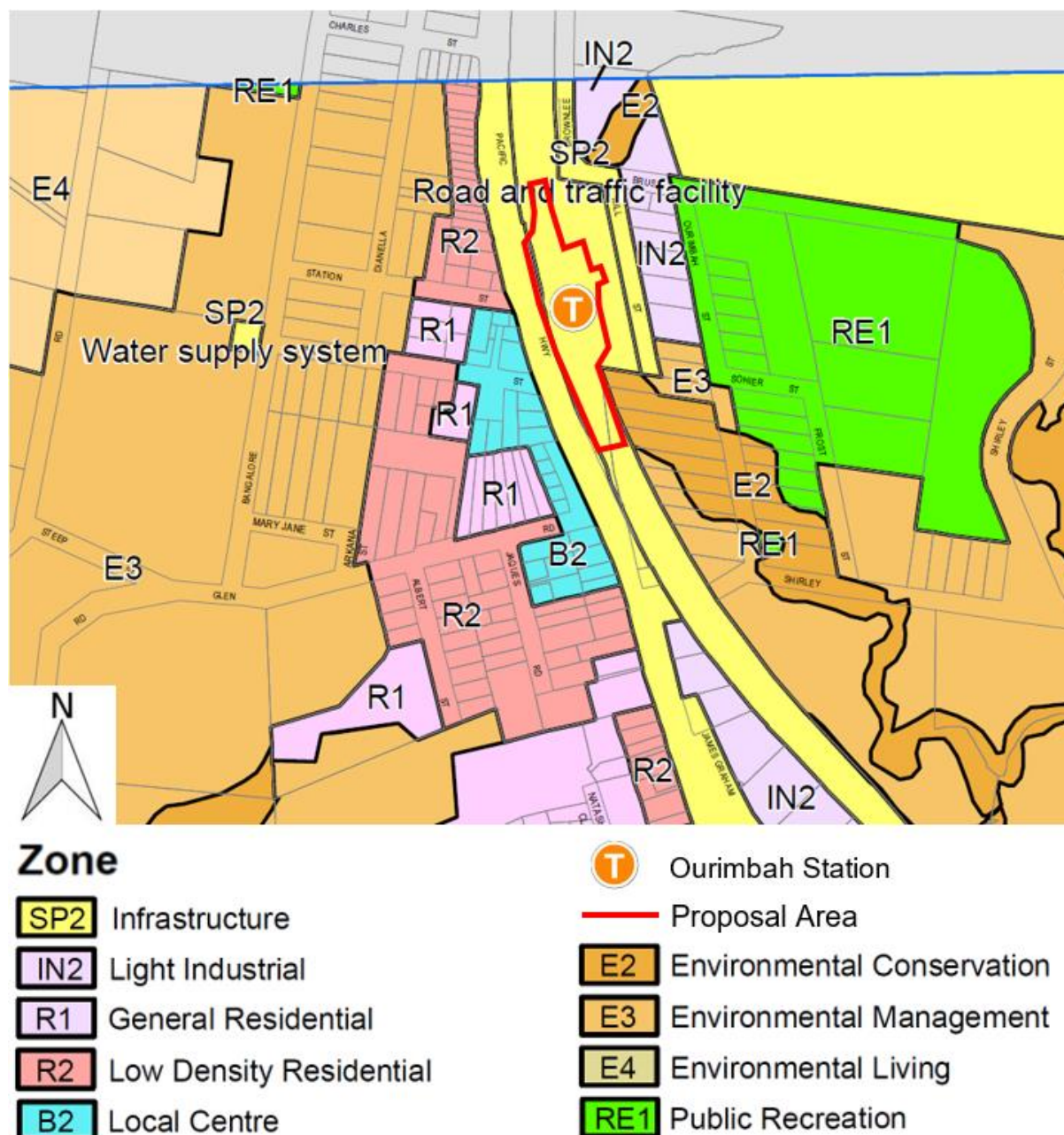


Figure 4-1 Wyong LEP zoning map (Source Wyong LEP 2013, Sheet LZN_009)

4.3. Ecologically sustainable development

TfNSW is committed to ensuring that its projects are implemented in a manner that is consistent with the principles of ecologically sustainable development (ESD). The principles of ESD are generally defined under the provisions of clause 7(4) of Schedule 2 to the EP&A Regulation as:

- the precautionary principle – if there are threats of serious or irreversible damage, a lack of full scientific uncertainty should not be used as a reason for postponing measures to prevent environmental degradation

- intergenerational equity – the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations
- conservation of biological diversity and ecological integrity – the diversity of genes, species, populations and their communities, as well as the ecosystems and habitats they belong to, should be maintained or improved to ensure their survival
- improved valuation, pricing and incentive mechanisms – environmental factors should be included in the valuation of assets and services.

The principles of ESD have been adopted by TfNSW throughout the development and assessment of the Ourimbah Station Upgrade Project. Section 3.2.3 summarises how sustainability has been considered in the design development of the Proposal. Section 6.13 includes an assessment of the Proposal on sustainability, and Section 7.2 lists mitigation measures to ensure ESD principles are incorporated during the construction phase of the Proposal.

5. Community and stakeholder consultation

Chapter 5 discusses the consultation undertaken to date for the Proposal and the consultation proposed for the future. This chapter discusses the consultation strategy adopted for the Proposal and the results of consultation with the community, relevant government agencies and stakeholders.

5.1. Stakeholder consultation during concept design

As part of the design development for the Proposal, meetings and workshops were held to ensure that key stakeholders were involved in the collaborative design process. Key stakeholders included:

- TfNSW
- Sydney Trains
- NSW TrainLink

Workshops and meetings undertaken during design development included:

- constructability workshops
- safety in design workshops with relevant TfNSW and Sydney Trains representatives
- multi-criteria analysis workshops with relevant TfNSW representatives
- design and scope development workshops
- risk management workshops.

5.2. Consultation requirements under the Infrastructure SEPP

Part 2, Division 1 of the Infrastructure SEPP contains provisions for public authorities to consult with local councils and other public authorities prior to the commencement of certain types of development. Clauses 13-16 of the Infrastructure SEPP require that public authorities undertake consultation with councils and other agencies, when proposing to carry out development without consent.

Table 5-1 provides details of consultation requirements under the Infrastructure SEPP for the Proposal.

Table 5-1 Infrastructure SEPP consultation requirements

Clause	Clause particulars	Relevance to the Proposal
Clause 13 Consultation with councils – development with impacts on council related infrastructure and services	<p>Consultation is required where development –</p> <ul style="list-style-type: none"> • will have a substantial impact on stormwater management services • is likely to generate traffic that would place a local road system under strain 	<p>The proposal includes widening of the footpath and removal of ramps and stairs within the Pacific Highway that will impact traffic and pedestrian movements. However, Pacific Highway is a classified road and administered by TfNSW not CCC.</p> <p>It is not anticipated that the proposal would result in adverse impacts on Council infrastructure. However,</p>

Clause	Clause particulars	Relevance to the Proposal
	<ul style="list-style-type: none"> involves connection to or impact on a council owned sewerage system involves connection to and substantial use of council owned water supply involves installation of a temporary structure on, or enclosing of a public space managed by council or is likely to significantly disrupt pedestrian or vehicle movement involve significant excavation to a road surface or footpath for which council has responsibility. 	TfNSW would consult CCC throughout public display, detailed design, and construction.
Clause 14 Consultation with councils - development with impacts on local heritage	<p>Consultation is required where the Proposal would result in:</p> <ul style="list-style-type: none"> has a 'not minor or inconsequential impact' on local heritage item (if not also a State heritage item) substantially impact on a heritage conservation area. 	The Proposal includes works that would impact on Ourimbah Station, and the WW1 Monument which are both locally listed heritage items as per Schedule 5 of the Wyong LEP. The impacts on these heritage items triggers the requirement for consultation with CCC which would be undertaken and continue throughout the detailed design and construction phases.
Clause 15 Consultation with Councils – development with impacts on flood liable land	<p>Consultation is required where railway station works:</p> <ul style="list-style-type: none"> impact on land that is susceptible to flooding by the Probable Maximum Flood (PMF) – reference would be made to <i>Floodplain Development Manual: the management of flood liable land</i>. 	The Wyong LEP flooding maps do not include the Ourimbah area. However, on CCC online mapping parts of the temporary construction compound are within the area identified as subject to the PMF (refer Section 6.9). No areas of the Proposal Area on which the development would be carried out are on land susceptible to flooding. Consultation with council would be undertaken in respect of flood impacts and continue throughout the detailed design and construction phases..
Clause 15A Consultation with Councils – development with impacts on certain land within the coastal zone	<p>Consultation is required where the Proposal would result in:</p> <p>impact on land within a coastal vulnerability area and is inconsistent with certified coastal management program that applies to that land.</p>	The Proposal is not within a coastal vulnerability area. Accordingly, consultation with CCC on this matter is not required.
Clause 15 AA Consultation with State Emergency Service – development with	<p>Consultation is required where the Proposal would result in:</p> <ul style="list-style-type: none"> impact on flood liable land – written notice must be given (together with a scope of works) to 	As stated in Clause 15 above, parts of the temporary construction compound are on flood liable land. Notice would be given to the State Emergency Services of the use of the land for the

Clause	Clause particulars	Relevance to the Proposal
impacts on flood liable land	the State Emergency Services and any response received within 21 days after the notice taken into consideration.	Proposal and any response received taken into account.
Clause 16 Consultation with public authorities other than councils	For specified development which includes development that is undertaken adjacent to land reserved under the <i>National Parks and Wildlife Act 1974</i> , consultation with the DPIE Energy, Environment and Science Group is required. Consultation with other agencies is required when specified by the Infrastructure SEPP.	The Proposal is not located adjacent to land reserved under the <i>National Parks and Wildlife Act 1974</i> . Accordingly, consultation with the DPIE Energy, Environment and Science Group on this matter is not required.

5.3. Consultation strategy

The consultation strategy for the Proposal was developed to encourage stakeholder and community involvement and foster interaction between stakeholders, the community and the project team. The consultation strategy that was developed, having regard to the requirements of the planning process ensures that stakeholders, customers and the community are informed of the Proposal and have the opportunity to provide input.

The objectives of the consultation strategy are to:

- provide accurate and timely information about the Proposal and REF process to relevant stakeholders
- raise awareness of the various components of the Proposal and the specialist environmental investigations
- ensure that the directly impacted community is aware of the REF and consulted where appropriate
- provide opportunities for stakeholders and the community to express their view about the Proposal
- understand and access valuable local knowledge from the community and stakeholders
- record the details and input from community engagement activities
- build positive relations with identified community stakeholders
- ensure a comprehensive and transparent approach.

5.3.1. Public display

Transport for NSW supports the Government's response to Coronavirus and continues to work closely with NSW Health and other government agencies, as well as external operators state-wide to ensure the safety of customers and help prevent the spread of Coronavirus.

As transport is an essential service, the delivery of vital infrastructure programs is continuing while ensuring the safety of our staff, customers and the community.

An important part of this is engaging with the local community so we can better understand their needs and deliver improved customer and community outcomes. Given these circumstances, the REF display strategy adopts a range of online and non-face-to-face consultation mechanisms, including:

- targeted consultation with local businesses, schools and other community groups through phone calls, emails and online briefings
- distribution of a project newsletter outlining the Proposal and inviting feedback on the REF to the local community
- advertisement of the REF public display in local newspapers with a link to the TfNSW website that includes a summary of the Proposal and information on how to contact the project team and provide feedback
- installation of project signage at the station
- consultation with council/s, Sydney Trains, NSW TrainLink and other non-community stakeholders
- geographically targeted social media advertising via Facebook to inform locals of the proposal and invite their feedback online.
- .

Community consultation activities for the Proposal would be undertaken during the public display of this REF. The display period of the REF would be advertised in the week that the public display commences. The REF would be displayed for a period of two weeks.

The REF would be placed on public display on the [TfNSW website¹](#), [NSW Government Have Your Say website²](#).

Further information on the Proposal may be requested by contacting the Project Infoline (1800 684 490) or by email: projects@transport.nsw.gov.au.

Feedback can be sent to:

- Email: projects@transport.nsw.gov.au

Or submitted to :

- NSW Government HaveYourSay website:
<https://www.nsw.gov.au/ourimbah-station-upgrade>
- TfNSW website: <https://www.transport.nsw.gov.au/ourimbah>

Following the consideration of feedback received during the public display period, TfNSW would determine whether to proceed with the Proposal and what conditions would be imposed on the project should it be determined to proceed.

¹ <https://www.transport.nsw.gov.au/ourimbah>

² <https://www.nsw.gov.au/ourimbah-station-upgrade>

5.4. Aboriginal community involvement

An Aboriginal Heritage Information Management System (AHIMS) search was undertaken for the area covered by the Proposal plus a one-kilometre buffer, on 10 December 2019. No Aboriginal sites were identified in or near the Proposal site. In addition, a visual inspection and walkover of the proposal site was conducted, and no Aboriginal sites, objects, places or areas of potential Aboriginal archaeological sensitivity were identified.

The extensive landscape modification that has occurred across the Proposal Area suggests that intact evidence of Aboriginal land use is unlikely to occur within the boundaries of the Proposal Area. Similarly, the high level of disturbance suggests that the archaeological potential of the area is low. Therefore, it was not considered necessary to undertake specific Aboriginal consultation.

5.5. Ongoing consultation

At the conclusion of the public display period for this REF, TfNSW would acknowledge receipt of feedback from each respondent. The issues raised by the respondents would be considered by TfNSW before determining whether to proceed with the Proposal (refer Figure ES-1-3).

Should TfNSW determine to proceed with the Proposal, the Determination Report would be made available on the TfNSW website and would summarise the key impacts identified in this REF, demonstrate how TfNSW considered issues raised during the public display period, and include a summary of mitigation measures proposed to minimise the impacts of the Proposal.

Should TfNSW determine to proceed with the Proposal, the project team would keep the community, CCC and other key stakeholders informed of the process, identify any further issues as they arise, and develop additional mitigation measures to minimise the impacts of the Proposal. The interaction with the community would be undertaken in accordance with a Community Liaison Management Plan to be developed prior to the commencement of construction.

6. Environmental impact assessment

Chapter 6 of the REF provides a detailed description of the likely environmental impacts associated with the construction and operation of the Proposal. For each likely impact, the existing environment is characterised and then an assessment is undertaken as to how the Proposal would impact on the existing environment.

Project-specific mitigation measures are discussed in each of the sub-sections, while a full list of mitigation measures for the Proposal is provided in Section 7.2.

This environmental impact assessment has been undertaken in accordance with clause 228 of the EP&A Regulation. A checklist of clause 228 factors and how they have been specifically addressed in this REF is included at Appendix B.

6.1. Traffic, transport and access

The assessment of potential impacts to traffic, transport and access included a desktop analysis and site inspection.

6.1.1. Existing environment

A description of the existing infrastructure at Ourimbah Station, including the platforms, car park and entrances, is provided in Section 1.3.

Surrounding road network

As discussed in Section 1.2, Ourimbah Station is located between the Pacific Highway to the west and Mill Street to the east. The Shirley Street commuter car park is located adjacent to the eastern side of the station and accessed by vehicles via Shirley Street and Brownlee Street. The Pacific Highway provides pedestrian access to the station from the west, while a footbridge over Bangalow Creek provides pedestrian access from Mill Street into the Shirley Street commuter car park and to the station.

The Pacific Highway is a major State arterial road and a designated 25 metre B-double heavy vehicle route. Both Mill Street and Shirley Street are part of the local road network.

Pick up and set down area

There is an indented no parking zone (sign designated as a “pick up & set down area”) on the southbound direction of the Pacific Highway, immediately to the north of a taxi zone and a bus zone. There is no formal kiss and ride area in the commuter car park.

Parking

The existing, sealed commuter car park is located to the east of the rail corridor and provides 140 marked parking bays, including five accessible spaces located close to the station entry. The parking of cars is not permitted on the Pacific Highway, Brownlee Street or the western end of Shirley Street. Car parking is not restricted on Mill Street.

The surrounding road network, commuter car park and transport access arrangements on the Pacific Highway are shown in Figure 6-1.



Figure 6-1 Surrounding road network, pick-up and set-down area and parking

Station platforms and access

The eastern platform (Platform 1) is accessed via a ramp from the commuter car park. The western platform (Platform 2) is accessed directly from the Pacific Highway.

Access between the platforms is via the stairs and existing footbridge towards the southern end of the platforms. Non-compliant pathways, car parking, ramps and stairs between the platforms do not facilitate access for people with reduced mobility, parents or carers with prams, or customers with luggage.

Public transport

Rail

Ourimbah Station is on the CCN Central Coast & Newcastle Line which provides services north to Newcastle and south to Central Station in Sydney. During weekdays, four southbound trains per hour stop during the morning peak between 6am and 7am, and four northbound trains per hour stop during the evening peak between 6pm and 8pm. Train services typically operate once every hour in off-peak periods.

Bus

There is an indented bus stop on the Pacific Highway which serves Ourimbah Station (shown in Figure 6-1). In the southbound direction of the Pacific Highway, a dedicated bus zone serves the bus stop. The bus stop is located to the north of the station entrance, closest to Platform 1. The stop services Route 36 (Westfield Tuggerah to Gosford via Niagara Park) and Route 47 (Ourimbah to Tuggerah). These two bus routes generally offer an hourly service. Four school bus routes (Routes 2075, 2557, S747 and S829) also uses this stop.

Taxi

There is an indented taxi zone in the southbound direction on the Pacific Highway (to Sydney) that is located immediately north of the designed bus zone (shown in Figure 6-1).

Pedestrian and cycling infrastructure

There are footpaths along both sides of the Pacific Highway, however, the footpath in the southbound direction only spans the length from the pick-up and set-down area to the WW1 Memorial Arch. Footpaths are also available along adjacent access roads to the station (southbound direction of Mill Street and westbound direction of Shirley Street), as depicted in Figure 6-2 below.



Figure 6-2 Pedestrian infrastructure around Ourimbah station

Cyclists currently use the local road and pedestrian network to access Ourimbah Station.

Ourimbah station has four existing secure bike lockers and two existing bike racks with capacity for up to 12 bicycles. These facilities are located in the commuter car park area and have direct access to Mill Street via the pedestrian bridge over Bangalow Creek. These bicycle facilities are shown in Figure 6-3 and their location in Figure 6-1.

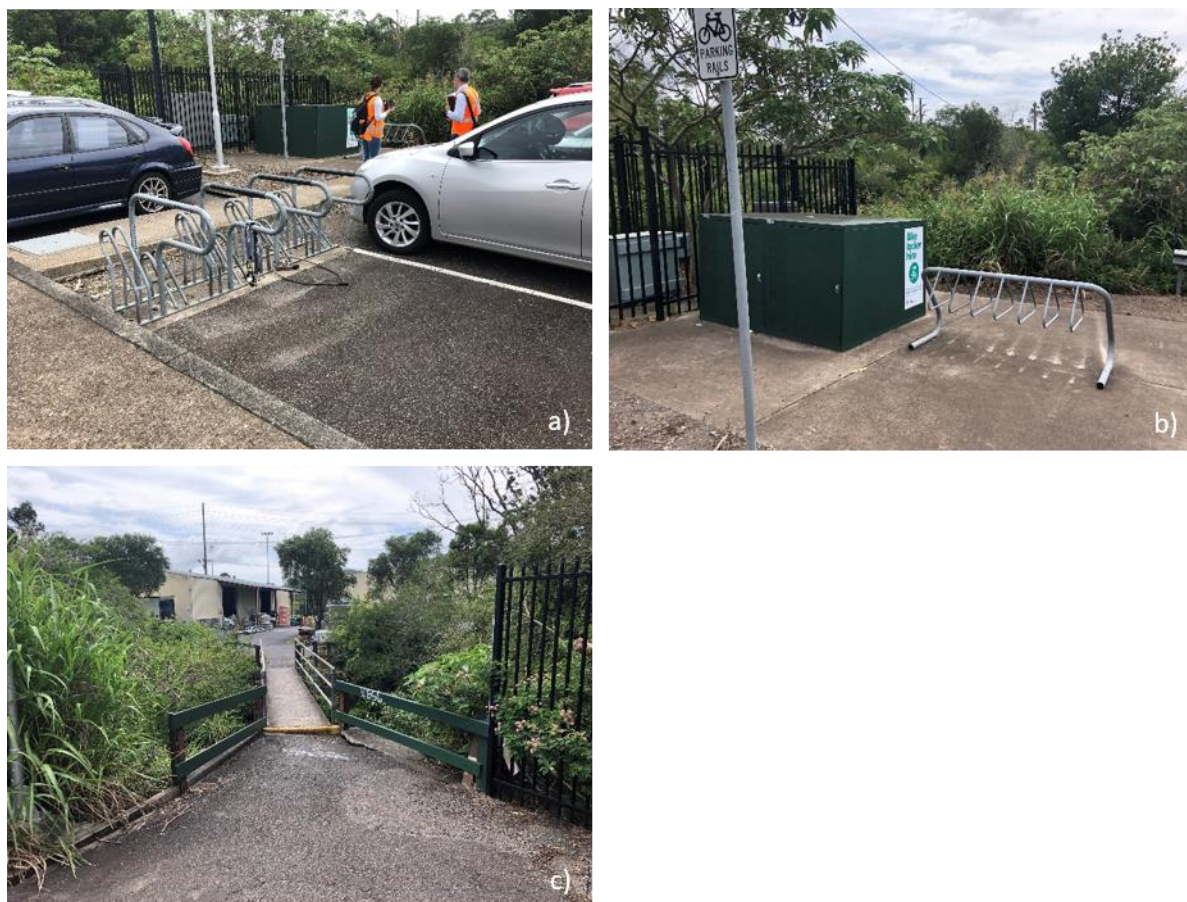


Figure 6-3 Existing cycling infrastructure – (a) bike racks, (b) bike lockers and additional bike racks, (c) pedestrian and cyclist access to Mill Street via the pedestrian bridge over Bangalow Creek

6.1.2. Potential impacts

Construction phase

Customer and public access impacts

Construction activities are anticipated to impact pedestrian and road users due to temporary restricted access to the construction areas. There is potential for higher levels of platform congestion arising from the restriction and narrowing of portions of the platform, while areas are temporarily fenced off during construction of the lifts, ramps and stairs. There will also be access restrictions to the station buildings during internal platform building modifications. Impacts will vary during the construction program as the works progress. However any re-configuration that affects pedestrians' access and use of the station will take place during night works or rail shutdowns. Access to the station will be maintained at all times outside of rail shutdowns and work would be scheduled to minimise impacts to highly trafficable areas where practicable.

Approval from TfNSW would be required for any out of hours work and the affected community would be notified as outlined in a Community Liaison Management Plan and CNVS (TfNSW, 2019) of any closures or alternate access arrangements.

Road network and construction traffic

The construction compound (refer to Section 3.3.7) would be accessed by vehicles via the commuter car park, through existing service gates and, passing under the eastern end of the existing footbridge (refer to Figure 3-6). Tall equipment, such as cranes, can access the compound via an existing service gate off the Pacific Highway.

The construction traffic generated by the Proposal works would primarily be light vehicles from workers moving to and from site, as well as heavy vehicles for periodic delivery and removal of materials and construction plant and equipment. Truck movements as a result of the Proposal are not expected to significantly increase local traffic volumes and are unlikely to impact the performance of the surrounding road network and intersections. During the construction phase anticipated vehicle types may include pickup trucks, flatbed trucks (some featuring loader cranes), excavators, skip trucks, concrete trucks, forklifts, and skid loaders.

In addition, hi-rail vehicles will access the site from the hi-rail access pad adjacent the construction compound (refer to Figure 3-5). The hi-rail plant may include a rail-mounted elevated work platform, flatbed trucks, Hiab crane trucks, excavators, pilling rigs and dump trucks.

Parking

Construction workers may contribute to a minor increase in demand for on-street parking. Workers would be expected to park on the local road network in proximity to the station during the construction period. Construction workers would only park within the commuter car parks during rail shutdowns when the car parks are not required by customers. Construction workers would be encouraged to use alternate transport options such as public transport to access the site. Parking for construction vehicles would be addressed in the Construction Traffic Management Plan (CTMP).

Access to the construction compound site via the Shirley Street commuter car park would mean that there would be minor disruptions to normal operations for commuter parking to allow for the movement of construction vehicles. Three parking spaces located beside the entrance to the construction compound site would become temporarily unavailable. In addition, the five parking spaces located next to the bike racks and in front of the bike lockers may be temporarily unavailable to minimise conflicts between construction vehicles and commuter vehicles.

The regrading of the path to the west of the current five accessible car parks, may impact the use of these parking spaces. During the site inspection none of these parking spaces were utilised (refer Figure 1-14), and review of 31 aerial images between 2012 and 2019, indicates these accessible spaces are rarely utilised, or utilised to capacity (refer example in Figure 6-2). If the operation of existing accessible spaces would be impacted by the regrading, the works could be staged to provide a minimum of two accessible spaces at all times. It is anticipated that this would address current demands for accessible parking.

During the assessment, it was observed that the commuter car park was around 70 per cent full. The temporarily loss of parking spaces is expected to have a minor impact on commuter car parking. It is anticipated that the commuter car parking can accommodate the usual parking demand.

Pedestrian and cyclists

Construction work is expected to have a minor impact on the pedestrian and cycle network given the restricted space in which construction work is to be carried out. It is expected that

there may be temporary disruptions to pedestrian and bicycle access as a result of the following construction activities:

- regrading and resurfacing of the footpath at the station entry from the Pacific Highway would alter customer access to the platforms
- longer walking distances due to detours associated with the removal of the existing stairway and ramp from the Pacific Highway and construction of new stairs and ramp
- removal and replacement of the existing stairs to Platform 2 and modifications to the footbridge, would alter customer access to the platforms during construction. To retain use of the footbridge during the station upgrades, a temporary staircase may be provided until the new staircase is constructed.
- regrading of the existing ramp from Platform 1 and reconstruction of the connecting footpath to the commuter car park, would require customers to use the eastern most staircase to access the station instead of a ramp
- potential temporary loss of access to the bike racks and lockers and access to Mill Street via the pedestrian footbridge over Bangalow Creek due to construction vehicle movements to and from the construction compound to Shirley Street via the commuter car park.

While disruptions are expected, any closures would be temporary, with safe and suitable detours provided to ensure access is maintained as a part of the CTMP implemented during the construction period.

Public transport

The bus stop on the Pacific Highway would not need to be relocated during construction however passengers would need to be detoured around the construction zone to gain access to the station. The path from the bus stop along the eastern side of the Pacific Highway would remain open during construction.

Train services would not be affected during construction. Scheduled rail shutdowns would be utilised to safely undertake relevant construction activities.

Emergency vehicle access

Access for emergency vehicles would be maintained at all times. Emergency services would be advised of all planned changes to traffic arrangements prior to applying the changes.

Operational phase

Pedestrians

The Proposal would improve pedestrian movements within, as well as to and from, Ourimbah Station due to the installation of the lifts to the platforms, regrading of the platform surfaces and existing footpaths and new DDA compliant ramps. This would allow for an accessible path of travel to and from the footbridge, station platforms, external road network, bus stop, and accessible parking spaces.

Road network and traffic

The Proposal would increase accessibility to Ourimbah Station and improve the customer experience and amenity, potentially leading to a minor increase in utilisation and patronage. This may be due to customers either travelling by train where they did not before, or by changing from another nearby station.

As a result, there may be a minor increase in traffic generation however, it is projected to have a negligible impact on the surrounding road network or the amenity of local residents.

Parking

The Proposal would result in no changes to the parking supply within the station precinct.

Public transport, pedestrian and cyclist infrastructure

The Proposal does not include changes to existing bus/rail services and would not impact on the operation (service operation or timetabling) of public transport in the vicinity of Ourimbah Station.

No change to the existing provision of bicycle racks and bike lockers is proposed.

6.1.3. Mitigation measures

The following mitigation measures are recommended to be implemented to minimise impacts during the construction of the Proposal:

- prior to the commencement of construction, a Construction Traffic Management Plan (CTMP) would be prepared, and would include the following:
 - communication to be provided to the community and local residents via notifications and signage to inform them of changes to parking (spaces being temporarily unavailable), pedestrian access and/or traffic conditions including vehicle movements and anticipated effects on the local road network relating to site work
 - suitable vehicle and pedestrian provisions to be maintained throughout construction to ensure that pedestrian connectivity is not impacted as a part of the work and that suitable and safe paths are provided, in particular, providing a suitable detour footpath from the station around the entrance of the construction compound to the pedestrian bridge over Bangalow Creek
 - scheduling of the construction of new paving and station re-configuration in stages to ensure that pedestrians will retain continued and safe access to the station throughout the duration of station upgrades. It is anticipated that any re-configuration that affects pedestrians' access and use of the station will take place during night works or rail shutdown periods.
 - scheduling of works/deliveries to avoid peak times as much as practicable to avoid traffic impacts and maintain customer access to the station
 - fencing, barriers and wayfinding signage would be installed between the construction site and outside the construction zone to ensure safe and easy navigation of pedestrians and cyclists
- allowance would be made during any works affecting the existing accessible parking spaces to ensure that a minimum of 2 accessible parking spaces are available at all times during the construction period.

Refer to Section 7.2 for a complete list of mitigation measures.

6.2. Landscape and visual amenity

A Landscape and Visual Impact Assessment Technical Paper (Envisage, 2020) was prepared for the Proposal and forms part of this REF. The findings of the assessment are summarised in this section.

The assessment included desktop analysis, site inspection, and the creation of a photomontage.

The photomontage provides an indication of what the Proposal may look like from a key representative viewpoint once complete, noting that materials and finishes are indicative only and would be further investigated during detailed design (refer Figure 6-4).



Figure 6-4 Photomontage of the Proposal (subject to detailed design)

The assessment has been carried out in accordance with the TfNSW (former Road and Maritime Services) *Guideline for Landscape Character and Visual Impact Assessment, Environmental Impact Assessment Practice Note EIA-N04* (TfNSW, 2018b), in which two discrete assessments were conducted:

- landscape character assessment
- visual impact assessment

The method to measure impacts in both assessments is based on the combination of sensitivity and magnitude of the impact to produce a combined impact rating of negligible, low, moderate-low, moderate, moderate-high and high (refer to Figure 6-5).

Sensitivity	Magnitude				
		High	Moderate	Low	Negligible
	High	High	Moderate-high	Moderate	Negligible
	Moderate	Moderate-high	Moderate	Moderate – Low	Negligible
	Low	Moderate	Moderate – Low	Low	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

Figure 6-5 TfNSW (former Roads and Maritime Services) visual impact grading matrix (Source: TfNSW, 2018b)

6.2.1. Existing environment

Existing landscape character

The heritage buildings of Ourimbah Station, the nearby heritage post office, and tall trees within the memorial park are important features that contribute positively to local character. However, the wide Pacific Highway corridor and road infrastructure dominate the character of the local area.

Buildings are generally low-rise, small-scale commercial properties (one or two storeys) that are constructed of a mix of masonry materials, with no unifying colour or texture. Residential dwellings are constructed of varied materials, colours and textures, two-storey, or split-level, in a number of design styles.

The landscape is assessed as having a **moderate** sensitivity as:

- the station and memorial park are valued by the public as attractive assets within a broader landscape of mixed architectural quality and character
- the heritage value of the station and its importance within the local landscape has been formally recognised
- the aesthetic setting of the station is important to its heritage significance.

Visual receivers and viewpoints

The closest viewpoints of the Proposal are from the Pacific Highway and residences on the elevated land immediately west of the station. Some views are possible from the Ourimbah shops and distant views from elevated residences and roads to the south. The approximate viewing area (or viewshed) from which the proposal area can be viewed is shown in Figure 6-6.

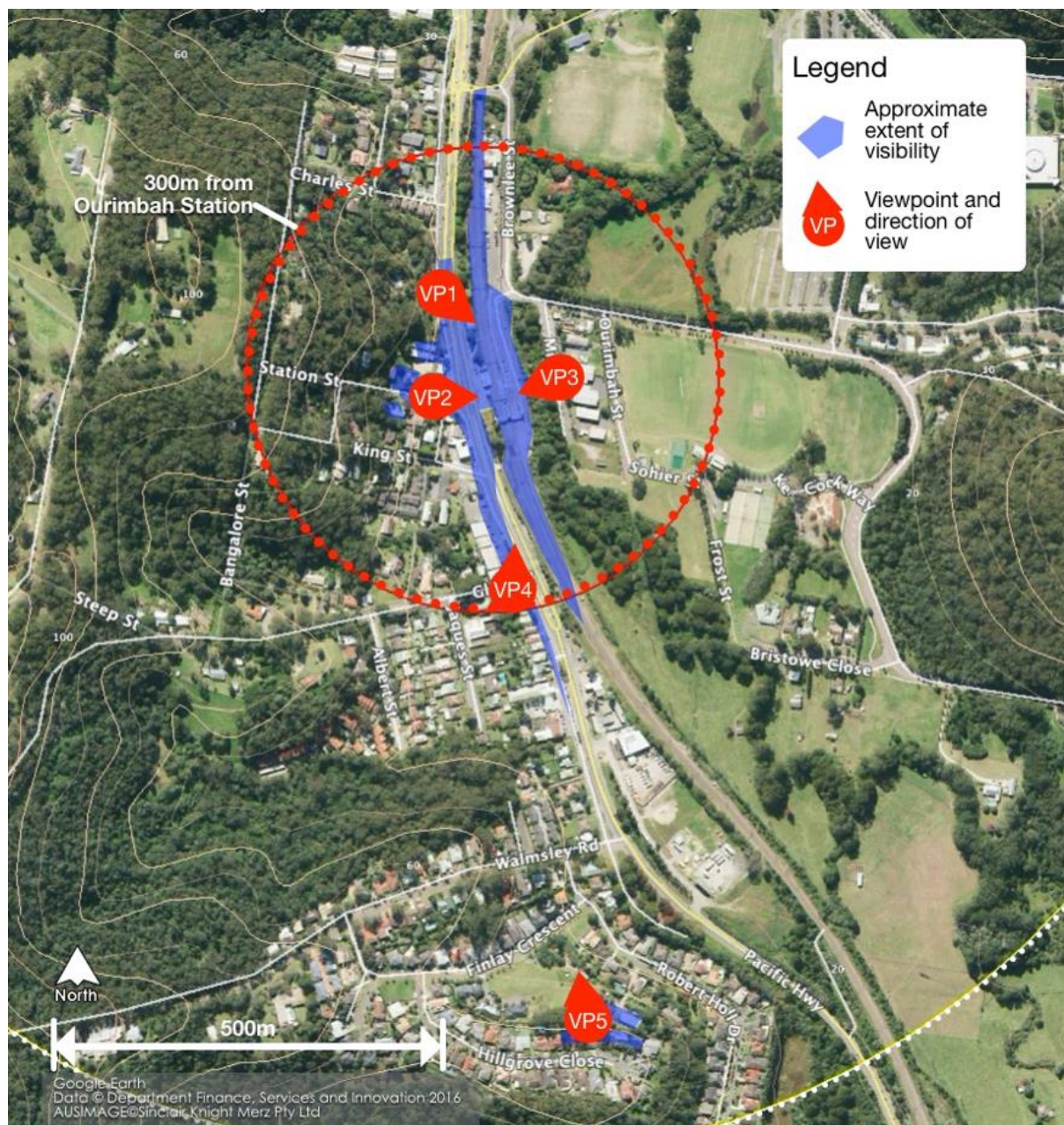


Figure 6-6 Approximate area from which the Proposal Area can be viewed (Source: Envisage 2020)

Visual receivers are individuals or groups of people whose views may be affected by the Proposal. These include users of residential dwellings, commercial premises, recreational spaces, and users of the station, roads and other public spaces. Five viewpoint locations have been identified, all within one kilometre of the station, as part of the visual impact assessment and these are described in Table 6-1 and shown in Figure 6-6 above.

Table 6-1 Identified viewpoints

Viewpoint	Description and sensitivity
VP1: View from the Pacific Highway west of the station	Located immediately west of the Proposal Area, viewpoints for users of the highway of the heritage buildings and memorial park, are close and possible within approximately 100m north and 100m south of the station. Vegetation within the memorial park provides partial screening. Sensitivity to views of the Proposal is considered moderate .
VP2: View from Station Street/Pacific Highway residents west of station	Located about 40m west of the Proposal Area, and including detached dwellings, a split-level apartment building commercial businesses fronting the Pacific Highway. Views include vegetation in the memorial park, which largely screen the station footbridge, and vegetated ridges in the background. The Proposal Area occupies a large proportion of the view, with views interrupted by traffic along the Pacific Highway. Sensitivity to views of the Proposal is considered moderate .
VP3: View from Mill Street footbridge east of station	Located about 40m east of the Proposal Area, the viewpoint is small from the footbridge over Bangalow Creek for pedestrians or cyclists. Views are dominated by the station fences, parked cars and the footbridge. Sensitivity to views of the Proposal is considered low .
VP4: Views from Ourimbah shops	From about 90m to about 450m south of the Proposal Area, views from a small commercial shopping centre for persons accessing the shops. The Pacific Highway dominates views and the trees in the memorial park largely obscure the station infrastructure. Sensitivity to views of the Proposal is considered low .
VP5: Views from Hillgrove Close residents south of station	Located about 775m south of the Proposal Area. Views from about five detached residents on higher slopes. The footbridge and taller station structures (such as the new lifts) would be visible Sensitivity to views of the Proposal is considered low .

6.2.2. Potential impacts

Construction phase

Landscape character

The construction activities and elements likely to be introduced into the visual environment include:

- fencing, hoarding and signage
- ground disturbance
- formwork and scaffolding
- cranes and other large plant and equipment
- construction compound including site office and amenities, storage of materials and equipment, site assembly of components, and parking of vehicles.

Although temporary, construction would be a prominent feature over a large area and affect key elements of the landscape. Key elements including, the memorial park through the removal of the mature tree in the north-east corner, the removal of garden beds including

four Fan Palms, and the station buildings themselves by the appearance of construction works and large equipment.

During construction the magnitude of change on the landscape character would be **moderate**. Combined with the **moderate** sensitivity to change, the overall landscape character impact during construction is assessed as **moderate**.

Visual impact

The impacts on the viewpoints in Figure 6-6 are assessed on the basis of sensitivity (from Table 6-1) and magnitude of change using the impact grading matrix previously discussed. The overall visual impacts anticipated during construction are described in Table 6-2.

Table 6-2 Summary of visual impact during construction

Viewpoint	Summary of impact	Overall impact
VP1: View from the Pacific Highway west of the station	Sensitivity of these visual receivers is considered moderate . The magnitude of change during construction is considered moderate overall. Tall mobile equipment, fencing and construction activity would be an immediately apparent part of the scene. Tree removal would be apparent, increase views to the footbridge and decrease the amenity of the views. Views would be unavoidable for pedestrians and from vehicles. Construction would be temporary.	moderate
VP2: View from Station Street/Pacific Highway residents west of station	Sensitivity to views of the Proposal considered moderate . The magnitude of change to views during construction is considered moderate as construction activity would be directly in line-of-sight, viewed across the Pacific Highway. Removal of the mature tree would increase views to the footbridge and decrease the amenity of the views. Construction would be temporary.	moderate
VP3: View from Mill Street footbridge east of station	Sensitivity to views of the Proposal considered low . The magnitude of change to views during construction is considered moderate as construction activity would be an apparent part of the scene and occupy a large proportion of the view. Construction would be temporary.	moderate-low
VP4: Views from Ourimbah shops	Sensitivity to views of the Proposal considered low . The magnitude of change to views during construction is considered low as construction activity would be largely screened by vegetation and the tree removal would not be readily apparent. Construction would be temporary.	low
VP5: Views from Hillgrove Close residents south of station	Sensitivity to views of the Proposal considered low . The magnitude of change to views during construction is considered low as construction activity and the tree removal would not be particularly apparent.	low

Operation phase

Landscape character

Following construction, the Proposal would improve access and reduce elements of visual clutter by removing redundant fencing, rationalising materials and opening entrances. This is

evident in the photomontage presented in Figure 6-4. The removal of the mature tall tree in the memorial park would increase visibility of the lift shafts and stairs, but only change a minor proportion of the landscape characteristics critical to the stations distinctive character. The overall leafy setting of the station provided by the tall trees in the memorial park would be maintained. The Proposal would have a **moderate** magnitude of change on the landscape character.

Visual impact

Once completed, the main Proposal elements that would be visible are the new lift shafts and improved station entrances from the Pacific Highway and the Shirley Street car park.

Exterior works to the station buildings and platforms, including regraded platform surfaces, upgrades of handrails and removal of furniture would be designed to be sympathetic to existing materials and colours and minimise permanent visual changes.

Table 6-3 provides a summary of impacts on the assessed viewpoints during operation.

Table 6-3 Summary of visual impact during operation

Viewpoint	Summary of impact	Overall impact
VP1: View from the Pacific Highway west of the station	Sensitivity of these visual receivers is considered moderate . The magnitude of change following construction is assessed as low . The memorial gardens will continue to provide a leafy setting and a scale compatible with the lift shafts. With the use of recessive colours, the lifts will be relatively inconspicuous against the background vegetation. The proposal will improve station entrances.	moderate
VP2: View from Station Street/Pacific Highway residents west of station	Sensitivity of these visual receivers is considered moderate . The magnitude of change following construction is assessed as low . The lift shafts would be visible, but with the use of recessive colours these elements would be relatively inconspicuous against the background vegetation.	moderate-low
VP3: View from Mill Street footbridge east of station	Sensitivity of these visual receivers is considered low . The magnitude of change following construction is assessed as low . Both lifts would be visible, but not contrast significantly with the proposed materials and colours. The tree removal would not increase exposure of infrastructure.	Low
VP4: Views from Ourimbah shops	Sensitivity of these visual receivers is considered low . The magnitude of change following construction is assessed as low . The proposal would be largely screened by vegetation. The proposal would constitute only a minor component of the wider view.	Low
VP5: Views from Hillgrove Close residents south of station	Sensitivity of these visual receivers is considered low . The magnitude of change following construction is assessed as low . Visible elements limited to the footbridge and eastern lift. The proposal would constitute only a minor component of the wider view.	Low

6.2.3. Mitigation measures

Mitigation measures would be reviewed and revised where appropriate during detailed design development and construction planning to minimise the level of visual impact of the construction and operation phases of the Proposal.

The detailed design of the Proposal is to be undertaken with reference to the recommendations included in the Landscape and Visual Impact Assessment Technical Paper (Envisage, 2020), and include:

- preparing an Urban Design Plan, which will inform the detailed design, to address the integration with the surrounding built form and in particular the relationship to the memorial park
- preparing a Public Domain Plan to address materials, colours, landscaping, fencing and pavement treatments to complement the character of the heritage buildings and link with the existing public domain
- The lifts are to have a finish (texture and colour) responding to the existing materials and colour tones of the surrounding station and heritage items
- designing and installing all lighting in accordance with the requirements of *AS4282 Control of the Obtrusive Effects of Outdoor Lighting*
- removing graffiti if it occurs at the construction site in accordance with TfNSW standard requirements
- during detailed design investigate opportunities to minimise permanent new fencing and adopt a dark recessive colour for new fencing (e.g. dark grey, charcoal)
- ensure materials and colours within the pedestrian areas complement – and do not dominate or detract from – the character of the heritage buildings and station setting
- Improving the appearance of temporary hoardings and fencing along the Pacific Highway by incorporating large-scale printed graphics (graphics may include images of the Proposal or the existing heritage station buildings).

Refer to Section 7.2 for a full list of proposed mitigation measures.

6.3. Noise and vibration

A Noise and Vibration Impact Assessment (NVIA) Technical Paper has been prepared for the Proposal (Pulse Acoustic, 2020). The assessment included:

- establishing the existing background noise levels in the vicinity of Ourimbah Station
- establishing the construction noise management levels and vibration limits that would apply to the upgrade works
- predicting environmental noise and vibration levels at nearby residential and other sensitive receivers due to the upgrade works
- considering potential noise from the operation of the upgraded Ourimbah Station
- identifying mitigation measures to reduce and manage noise and vibration impacts from the upgrade works to comply with established construction noise management levels and vibration limits.

6.3.1. Existing environment

Sensitive receivers and noise catchment areas

The Proposal is located on an active railway corridor and immediately adjacent the Pacific Highway, a major State arterial road. As such the environment of the surrounding areas is dominated by railway and road noise and vibration throughout the day.

Three Noise Catchment Areas (NCAs) were identified for the assessment and are shown in Figure 6-8.

NCA 1, includes the area to the western side of the rail lines and consists of commercial and residential dwellings, with some residential townhouses close to the station. The dominant noise source in the catchment is from vehicle traffic travelling on the Pacific Highway.

NCA 2, includes the remainder of receivers located on the western side of the railway line, further from Ourimbah Station. The NCA mostly consists of residential dwellings, located more than 350 metres from Ourimbah Station. Background levels are lower during the day than NCA 1, with the Pacific Highway and Ourimbah commercial uses being further away.

NCA 3, includes the receivers east of the railway line. Some light industrial premises are located on Mill Street close to the station, and some active recreation areas. Residential receivers are located at least 200 metres, and educational establishments at least 500m, from the station respectively. The main noise sources are from the railway line, light industrial uses and road traffic from the Pacific Highway and local roads.

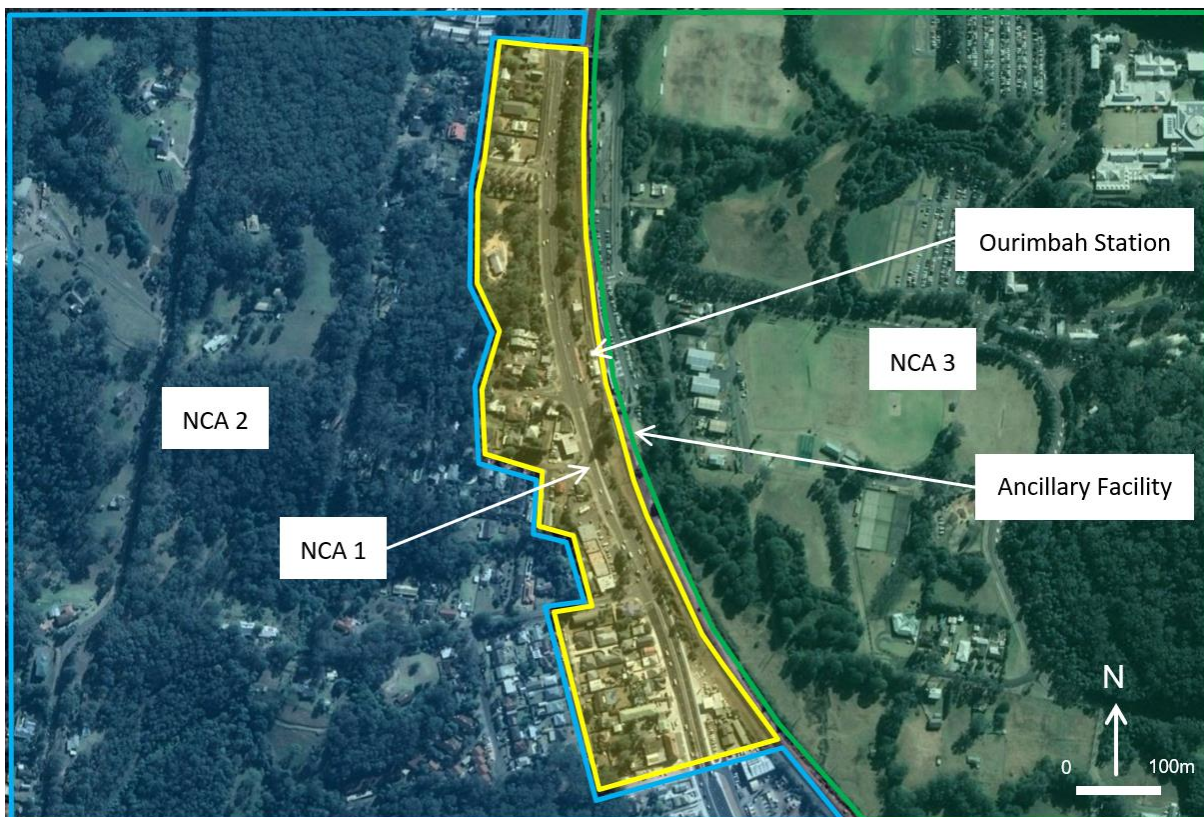


Figure 6-7 Location of Noise Catchment Areas (NCAs) (Source: Pulse Acoustic, 2020)

Background noise levels

Existing noise levels (at the time of preparing the NVIA) were measured to determine background noise levels and establish operational and construction noise criteria for sensitive receivers close to the Proposal. Locations were selected to be representative of receivers that would experience potential noise impacts from construction activity.

Unattended monitoring was conducted from Monday 17 February 2020 to Wednesday 26 February 2020 at two of the closest residential receivers to Ourimbah Station (Location A and Location B) as shown in Figure 6-8.

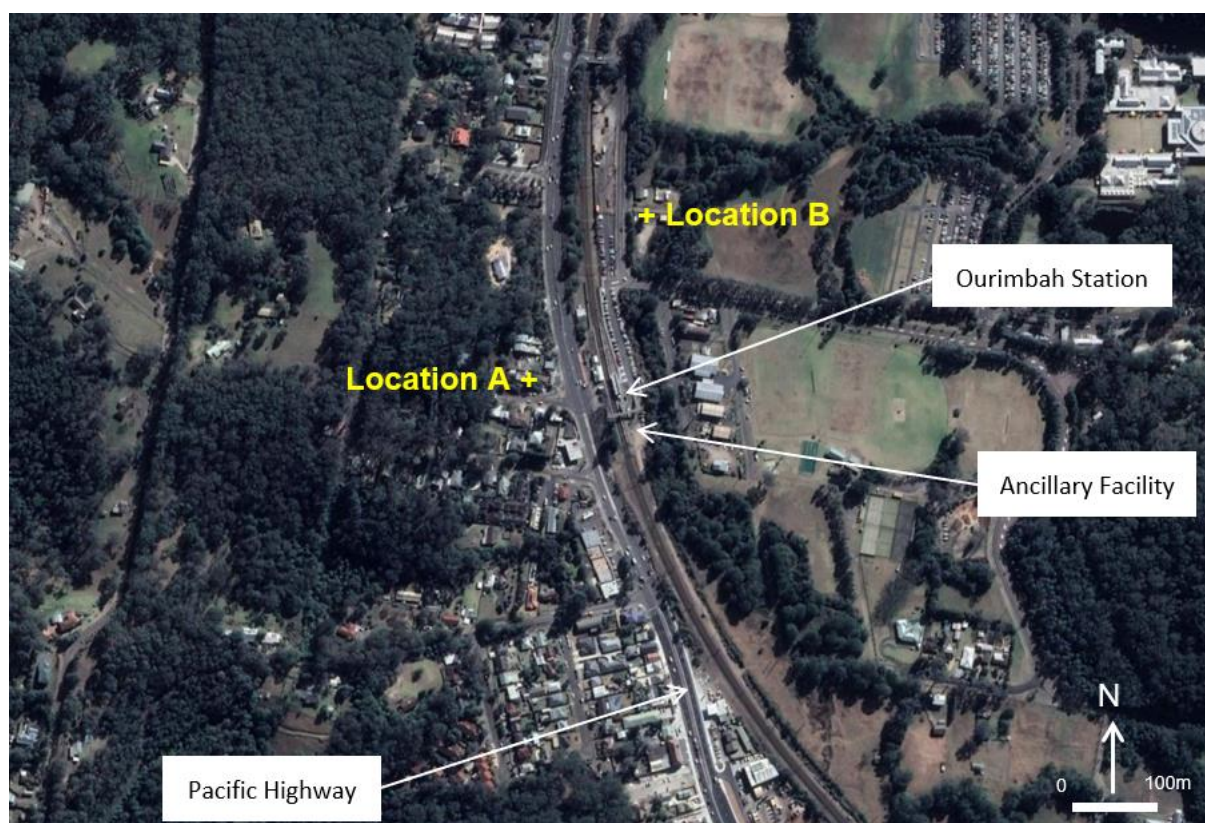


Figure 6-8 Noise monitoring locations

Rating Background Noise Levels (RBLs) are determined from measurement of L_{A90} noise levels (representing the noise level exceeded for 90 per cent of the monitoring period) in the absence of noise from the Proposal.

The results of the unattended noise monitoring for the two locations are provided in Table 6-4. The measurements confirm road traffic noise and environmental noise is quieter during the night period than the day and evening periods.

Table 6-4 Unattended noise monitoring results – background noise levels

	Period ¹	Rating Background Level (L_{A90}) in dB	Ambient Noise Level (L_{Aeq}) in dB
Location A	Day time	50	62
	Evening	45	59

	Period ¹	Rating Background Level (L_{A90}) in dB	Ambient Noise Level (L_{Aeq}) in dB
Location B	Night time	37	58
	Day time	47	57
	Evening	45	56
	Night time	39	56

Note 1: Day is defined as 7.00am to 6.00pm, Monday to Saturday and 8.00am to 6.00pm Sundays & Public Holidays. Evening is defined as 6.00pm to 10.00pm Monday to Sunday. Night time is defined as 10.00pm to 7.00am Monday to Saturday and 10.00pm to 8.00am Sundays & Public Holidays.

Construction noise criteria

The EPA's *Interim Construction Noise Guideline* (ICNG) (DECC, 2009) is the principal guideline for the assessment and management of construction noise in NSW. The ICNG recommends standard hours of construction as:

- Monday to Friday: 7am to 6pm
- Saturday: 8am to 1pm
- Sundays and public holidays: no works.

Noise management levels (NMLs) have been determined for receivers as per the procedures in the ICNG. The ICNG prescribes set noise management levels for non-residential receivers such as commercial, schools and places of worship. The background noise levels from the monitoring at Location A were used to determine the NMLs for Residential receivers in NCA 1, and the monitoring at Location B used for both NCA 2 and NCA 3 due to the increased distance from the Pacific Highway.

Table 6-5, provides the construction noise management levels (NMLs) for the Proposal. The NVIA Technical Paper (Pulse Acoustic, 2020) provides a summary of all other criteria relevant to the Proposal.

Table 6-5 NMLs for construction

Receiver	Standard Hours ($RBL+10dB$)	Out of Hours ($RBL+5dB$) ¹		
	Day time	Day time	Evening	Night
Residential – NCA 1	60	55	50	42
Residential – NCA 2	57	52	50	44
Residential – NCA 3	57	52	50	44
Commercial	70	70	70	70
Industrial	75	75	75	75
Place of Worship	55	55	55	55

Receiver	Standard Hours (RBL+10dB)	Out of Hours (RBL+5dB) ¹		
	Day time	Day time	Evening	Night
Active Recreation	65	65	65	65
Education Classroom	55	55	55	55

Note 1 – Out of Hours construction hours – Evening hours are 6pm to 10pm. Night time hours are 10pm to 7am Sunday to Saturday and 10pm Saturday to 8am Sunday

Note – NML's for commercial, industrial, educational (classroom) and active recreation facilities are taken from the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009) (ICNG).

In addition, a 'highly noise affected' level of 75 dB(A) for residential receivers represents the point above which the ICNG indicates there may be strong community reaction to noise.

Where works exceed the NMLs, all reasonable and feasible measures (such as equipment selection and location, construction scheduling and respite periods) should be implemented to reduce noise levels as far as practicable.

Sleep disturbance

Sleep disturbance criteria have also been established for residential receivers which are based on the *NSW Roads Noise Policy* (RNP) (DECCW, 2011). Based on the Policy, the adopted sleep disturbance criterion at residential properties for noise emissions generated by short term events occurring during the night-time period is an internal noise level of 50 dB L_{Amax} .

As a guide, the difference between the internal noise level and the external noise level is typically 10 dB with windows open for adequate ventilation. Therefore, the proposed noise screening criterion for sleep disturbance is 60 dB L_{Amax} external noise level at residential properties.

Road noise

For traffic noise, the criterion applied on public roads generated during the construction phase of a project is an increase in existing road traffic noise of no more than 2 dB(A).

Construction vibration criteria

The effects of construction vibration in buildings are normally divided into:

- those in which the occupants or users of the building are inconvenienced or possibly disturbed (human comfort)
- those in which the integrity of the building or the structure itself may be prejudiced (structural integrity).

Human comfort

The EPA's *Assessing Vibration: A Technical Guideline* (DEC, 2006) provides the guideline values used for continuous, transient and intermittent events that are based on a Vibration Dose Value (VDV) rather than a continuous vibration level. The VDV is dependent upon the level and duration of the short-term vibration event, as well as the number of events occurring during the day time or night-time period.

Structural damage vibration

- Structural damage vibration limits are based on *British Standard BS7385: Part 2-1993 Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration* (BSI 1993)

Safe working distances

From BS 7385 and the CNVS (TfNSW, 2019a), the safe working distances for items of vibration intensive equipment are outlined in Table 6-6.

Table 6-6 Recommended minimum working distances from vibration intensive plant

Scenario	Minimum Distance (Cosmetic Damage)	Minimum Distance (Human Response)
Jackhammer (handheld)	1 m (nominal)	Avoid contact with structure
Small Hydraulic Hammer (300kg)	2 m	7 m
Medium Hydraulic Hammer (900kg)	7 m	23 m
Piling Rig – Bored $\leq 800\text{mm}$	2 m	N/A
Piling Rig – Hammer	15 m	50 m
Vibratory Roller (2-4 tonne)	6 m	20 m

Operational noise criteria

The *Noise Policy for Industry* (EPA, 2017) (NPI) has two broad objectives:

- control intrusive noise levels in the short-term
- maintain noise amenity levels for specific land uses over the medium to long-term.

The NPI sets out procedures for establishing the project intrusiveness $L_{Aeq(15\text{minute})}$ and project amenity $L_{Aeq(\text{period})}$ noise levels, where the lower (i.e. more stringent) is then adopted as the Project Trigger Noise Level (PTNL). Applicable PTNLs for all noise sensitive receiver areas shown in Table 5-6 of the NVIA.

6.3.2. Potential impacts

Construction phase

The potential for noise and vibration impacts on sensitive receivers would typically depend on:

- the type of equipment and number of simultaneously operating plant items
- topography and the presence of any other physical barriers
- proximity to sensitive receivers
- hours/duration of construction work
- the prevailing background noise level

- ground conditions.

While much of the work is expected to take place during standard construction hours, construction work would also take place during weekend rail shutdowns and involve night work.

To assess the potential impacts from the proposed works, the construction phases described in Section 3.3.1 were used to develop indicative construction scenarios comprising typical plant and equipment. The scenarios developed were:

- site establishment
- electrical and communications
- construction works (footbridge, stairs, lifts and ramp works)
- construction works (building and platform works)
- installation finishing works
- testing and commissioning
- demobilisation.

Construction noise

A 3D computer model is then used to predict the noise levels for each NCA resulting from the above scenarios. Worst-case noise level predictions have been made based on worst-case impacts for each work scenario. The predictions are provided in the NVIA (Pulse, 2020).

A summary of predicted noise impacts for the works scenarios is provided in Table 6-7 below. Overall, no exceedances of the highly noise affected criteria are predicted during any noise generating scenario. No exceedances are predicted at non-residential receivers during the project.

A number of residential receivers will be affected by exceedances of NMLs during the OOHW periods, particularly during the construction, installation and finishing stages of the Proposal, for which mitigation measures would need to be adopted.

During standard construction hours, for all but one residential receiver in NCA1 (where the exceedance is 1dB), construction noise from the Proposal is not predicted to exceed the NMLs. It is considered that construction noise generated by the Proposal during standard working hours would not result in significant adverse impacts.

Table 6-7 Summary of predicted noise impacts

Works scenario	Summary of predictions	Timing of works ¹
Site establishment and enabling works	No exceedance of standard hours NMLs During OOHW 2, exceedances are predicted at receivers in NCA 1 and NCA 2 with maximum exceedance up to 9 dB above the NML in NCA 1	Standard hours OOHW 1 ¹ OOHW 2 ¹
Electrical and communications	No exceedance of NMLs	Standard hours

Works scenario	Summary of predictions	Timing of works ¹
Construction work (Footbridge, stairs, lifts and ramps works)	No exceedance of standard hours NMLs For the OOHW 2, exceedances are predicted at some receivers in all three NCAs. The maximum exceedance up to 18 dB above the NML in NCA 1	Standard hours 48 hr rail shutdown OOHW 1 OOHW 2
Construction work (Building and platform works)	Exceedance of standard hours NMLs by 1 dB at one residential receiver in NCA1 For the OOHW 2, exceedances are predicted at receivers in NCA 1 and NCA 2. The maximum exceedance up to 19 dB above the NML in NCA 1. No exceedance in NCA 3	Standard hours 48 hr rail shutdown OOHW 1 OOHW 2
Installation and finishing	Exceedance of standard hours NMLs by 1 dB at one residential receiver in NCA1 For the OOHW 2, exceedances are predicted at receivers in NCA 1 and NCA 2. The maximum exceedance up to 19 dB above the NML in NCA 1. No exceedance in NCA 3	Standard hours 48 hr rail shutdown OOHW 1 OOHW 2
Testing and commissioning	No exceedance of NMLs	Standard hours
Demobilisation	No exceedance of standard hours NMLs For the OOHW 2, exceedances are predicted at receivers in NCA 1 and NCA 2. The maximum exceedance up to 8 dB above the NML in NCA 1. No exceedance in NCA 3	Standard hours OOHW 1 OOHW 2

Note 1 - Work outside of standard construction hours is defined as Out-of-Hours Work (OOHW) and can be divided into two periods of sensitivity. OOHW 1 is defined as Monday to Saturday 6:00pm to 10:00pm (evenings), Saturday 7:00am to 8:00am and 1:00pm to 10:00pm (day & evening) and Sunday and public holidays 8:00am to 6:00pm (days). OOHW 2 is defined as Monday to Saturday 10:00pm to 7:00am (nights) and Sundays and public holidays 6:00pm to 8:00am (nights).

Cumulative noise impacts

Cumulative noise impacts warrant assessment where more than one works scenario operates at the same time and in the same location such that the same receiver is impacted by noise from more than one works scenario. Generally, the proposed works are scheduled in consecutive phases which are dependent on rail shutdowns, therefore cumulative noise impacts are not anticipated.

Construction road traffic noise

The proposed construction activities would not generate a significant amount of construction traffic. The relatively small number of construction vehicles accessing the site is predicted to have an insignificant effect on existing road traffic noise levels and further consideration of noise impacts due to construction traffic is not required.

Construction vibration

The use of vibration intensive equipment is proposed. The construction equipment that are potential sources of vibration include plate compactors, hydraulic hammers, vibratory roller and handheld jackhammer.

Piling works carried out using non-vibration intensive bored piling, would reduce the potential impacts on the heritage items and surrounding properties.

Human comfort

In relation to human comfort (response), the minimum working distances in Table 6-6 relate to continuous vibration and apply to residential receivers. For most construction activities, vibration emissions are intermittent in nature and for this reason, higher vibration levels, occurring over shorter periods are accepted, as discussed in *Assessing Vibration – A Technical Guideline* (DEC, 2006).

Impacts on heritage items

In relation to cosmetic damage, the minimum working distances in Table 6-6 would be applied to structures. The compaction plate is predicted to have similar impacts to a 1-2 tonne vibratory roller. Therefore, a minimum distance of five metres would be applied to any neighbouring on-site buildings whilst using this equipment.

The heritage structures located within the Proposal Area and in proximity are identified in Section 6.5. The heritage buildings would be considered on a case by case basis. Where a historic building is deemed to be sensitive to damage from vibration (following inspection), the vibration criteria would be reduced accordingly in line with the CNVS (TfNSW, 2019a).

Operation phase**Operational noise**

The Proposal would not increase operations on the rail line, and not result in any increase in rail noise.

Any potential increase in road traffic and road traffic noise as a result of the Proposal is expected to be minimal and predicted to comply with the Road Noise Policy.

Operational equipment is expected to include lift motor and lift air conditioner. It is predicted that the sound power levels of such equipment would be low. Therefore, operational noise impacts at neighbouring receivers are predicted to readily comply with the operational noise criteria.

Operational vibration

The operational noise sources do not contain any significant sources of vibration. No further assessment or mitigation measures are necessary.

6.3.3. Mitigation measures

Specific mitigation measures outlined in the NVIA (Pulse Acoustics, 2020) include:

- a Construction Noise and Vibration Management Plan (CNVMP) would be prepared to determine specific mitigation measures for construction activities. The CNVMP would prescribe reasonable and feasible mitigation measures to minimise construction noise and vibration. The measures would focus on contractor inductions, selection and operation of plant and equipment, work scheduling (including respite periods), prescribing safe working distances for vibration intensive equipment, procedures for noise and vibration monitoring and obtaining approvals for out of standard hour's works
- to avoid structural impacts as a result of vibration or direct contact with structures, the proposed work would be undertaken in accordance with the safe work distances outlined in the NVIA (Pulse Acoustics, 2020).

The NVIA (Pulse Acoustics, 2020) provides details of additional mitigation measures, in accordance with the matrix contained in the CNVS (TfNSW, 2019a), which are recommended for OOHW works. Mitigation measures recommended include project notification, verification monitoring, specific notifications, respite periods, project specific respite offers, and duration reductions. These measures would be addressed in the CNVMP and, where relevant, incorporated into applications for OOHW.

Refer to Section 7.2 for a full list of proposed mitigation measures.

6.4. Aboriginal heritage

An assessment was undertaken for the Proposal in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* guidelines recommended to be followed by the Department of Planning, Industry and Environment (DPIE). The assessment involved desktop review of information and observations from site inspection.

6.4.1. Existing environment

Ourimbah station is located on the traditional lands of the Darkinjung Aboriginal people. A search of the Aboriginal Heritage Information Management System (AHIMS) database was undertaken for the area covered by the Proposal (including a buffer area of about one kilometre) on 10 December 2019. No registered Aboriginal sites were located within the area.

The site inspection, undertaken on 5 February 2020 by the REF project team, noted all of the site has been extensively modified since the introduction of the railway station and did not identify any items of potential Aboriginal heritage value.

Certain landscape features, such as nearby waterways, sand dune systems, ridge tops, ridge lines, headlands, cliff faces and rock caves / shelters, can indicate the likely presence of Aboriginal objects. Bangalow Creek is located about 20 metres to the east of the Proposal Area however the extensive landscape modification and high level of disturbance that has occurred across the Proposal Area suggests that the presence of culturally sensitive buried items are unlikely within the boundaries of the Proposal.

6.4.2. Potential impacts

Construction phase

Construction of the Proposal would involve some ground disturbance for the following activities:

- the foundations and pits for the new lift shafts would require excavation up to a depth of about 2.5 metres
- the regrading and new accessible pathway from the bus stop on the Pacific Highway to the station
- the new pathway and ramp within and between the commuter car park and Platform 1.

Ground disturbing activities have the potential to impact Aboriginal sites, if present. However, the ground disturbance is confined to existing modified and developed land.

As no Aboriginal sites, objects or places, or areas of potential Aboriginal archaeological sensitivity were identified within the Proposal Area or immediate surrounds during the inspection or research of the area, these ground disturbing activities are unlikely to impact any Aboriginal heritage items. Therefore, the Proposal's impact on Aboriginal heritage during the construction phase is considered negligible.

Operation phase

There would be no risks to Aboriginal heritage from the operation of the Proposal.

6.4.3. Mitigation measures

All construction staff would undergo an induction in the recognition of Aboriginal cultural heritage material.

If previously unidentified Aboriginal heritage objects are uncovered during construction, in accordance with TfNSW's *Unexpected Heritage Finds Guideline* (TfNSW, 2019b), work would cease in the vicinity of the find and the TfNSW Project Manager and TfNSW Environment and Planning Manager would be notified immediately to assist in co-ordinating next steps which are likely to involve consultation with an archaeologist, DPIE and the Local Aboriginal Land Council/s. If human remains are found, work would cease, the site would be secured and the NSW Police and DPIE would be notified.

Refer to Section 7.2 for a full list of proposed mitigation measures.

6.5. Non-Aboriginal heritage

A Statement of Heritage Impact (SoHI) has been prepared by Artefact (2020) for the Proposal. The assessment included a desktop analysis and site inspection of the Proposal Area undertaken on 5 February 2020. The SoHI has been summarised in this section.

6.5.1. Existing environment

Historical background

Ourimbah Station

European exploration of the Hawkesbury River area began as early as 1788. Around 30 years later Europeans began to settle in the Central Coast area with timber and shipbuilding quickly growing as major industries, followed later by citrus orchards.

Ourimbah Station began with tender for the construction of the timber station building, Station Master's Residence and a goods shed at Blue Gum Flat awarded on 20 April 1887. An opening ceremony quickly followed in August 1887. Blue Gum Flat was then renamed Ourimbah in 1888. The brick station building on Platform 1 and the original footbridge were built circa 1910, and by 1911 the layout of the buildings and footbridge was very similar to today (refer Figure 6-9). The original footbridge was replaced by the current footbridge following a tender in 1992.



Figure 6-9 Ourimbah Station, circa 1911. Note early footbridge location. (Source: Artefact 2020 - Ourimbah Regional Residents Association Inc.)

War Memorials

Two war memorials are located within the proposal area (Figure 6-10). The Ourimbah First World War Memorial Arch (WW1 Monument) is an arch located at the entry to the memorial garden, immediately to the south of the station entry from the Pacific Highway and was constructed in 1938. The World War 2 Monument (WW2 memorial) is a sandstone plinth with a brick base located in the centre of the memorial garden and was constructed in 1988.



Figure 6-10 World War 1 monument (left) and World War 2 monument (right)

Heritage items

Statutory registers provide legal protection for heritage items. In NSW, the *Heritage Act 1977* (Heritage Act) and the EP&A Act provide for heritage listings. The State Heritage Register (SHR), the Section 170 Heritage & Conservation Registers and the environmental heritage schedules of LEPs provide statutory listings.

The SoHI provides the search results of the relevant registers for the Proposal Area and surroundings, which was undertaken on 7 February 2020 and is reproduced in Table 6-8 below.

Table 6-8 Heritage items within the Proposal Area and within the vicinity

Item	Address	Significance	Listing	Place ID (Item No.)	Distance from Proposal Area
Ourimbah Railway Station Group and Residence	Pacific Highway, Ourimbah, NSW 2258	Local	NSW Transport RailCorp s170	SHI listing no. 4801030	Within
Ourimbah Railway Station & Station Master's House	1 Mill Street, Ourimbah, NSW 2258	Local	Wyong LEP 2013	LEP item No. I61	Within
World War 1 Monument	1 Mill Street (near Railway Station), Ourimbah, NSW 2258	Local	Wyong LEP 2013	LEP item No. I66	Within
Post Office and Residence	1 Station Street, Ourimbah, NSW 2258	Local	Wyong LEP 2013	LEP Item No. I62	Approximately 67m west of the proposal area

Item	Address	Significance	Listing	Place ID (Item No.)	Distance from Proposal Area
Utility Structure	1A Jaques Road, Cnr Glen Road, Ourimbah, NSW 2258	Local	Wyong LEP 2013	LEP Item No. 165	Approximately 283m southwest of the proposal area

The Ourimbah Railway Station & Station Master's House is identified as a local heritage item in the Wyong LEP 2013 due to its historic, aesthetic, social values and research potential. The Ourimbah Railway Station Group and Residence is also identified on RailCorp's section 170 register of heritage assets, and so forms part of the State Heritage Inventory, due to its rarity and representativeness as an example of an intact station which combines buildings of two periods and as an unusual collection of standard building types in one location. However the Ourimbah Railway Station & Station Master's House is not classified as a State significant item and is listed of local heritage significance.

The WW1 Monument is listed in the Wyong LEP 2013 of local heritage significance due to its historic, aesthetic, social values and research potential. The WW2 monument is not listed as a heritage item.

Archaeological potential

The Heritage Act provides protection for 'relics', which includes archaeological material or deposits. Excavation permits, or exceptions, or exemptions must be issued under the Heritage Act to disturb or excavate a relic.

The SoHI considers the potential for identifying archaeological remains related to early European settlement as nil. The SoHI considered the potential for identifying archaeological remains with respect to the original station and station expansion as low.

It is anticipated that any archaeological remains would consist of the remnants of former structures ('works') and it is not anticipated that artefacts or artefact bearing deposits ('relics') would survive in association with remains of this type. Therefore, excavation works within the proposal area do not require approval under s139 of the Heritage Act.

6.5.2. Potential impacts

An assessment of heritage impact has been undertaken in accordance with the definitions in Table 6-9

Table 6-9 Terms for assessing the magnitude of heritage impact

Magnitude	Definition
Major	<p>Actions that would have a long-term and substantial impact on the significance of a heritage item. Actions that would remove key historic building elements, key historic landscape features, or significant archaeological materials, thereby resulting in a change of historic character, or altering of a historical resource.</p> <p>These actions cannot be fully mitigated.</p>

Magnitude	Definition
Moderate	This would include actions involving the modification of a heritage, including altering the setting of a heritage item or landscape, partially removing archaeological resources, or the alteration of significant elements of fabric from historic structures. The impacts arising from such actions may be able to be partially mitigated.
Minor	Actions that would results in the slight alteration of heritage buildings, archaeological resources, or the setting of an historical item. The impacts arising from such actions can usually be mitigated.
Negligible	Actions that would results in very minor changes to heritage items.
Neutral	Actions that would have no heritage impact.

Construction phase

During construction the Proposal will result in the adverse visual effects of construction works and equipment described above in Section 6.2.2, that will adversely impact the amenity of the heritage setting of the station and memorial park. However, these impacts will be temporary.

Heritage items within the vicinity of the Proposal Area

The SoHI considered the proposed works would not result in any direct (physical) impacts to any of the locally listed heritage items in Table 6-8 above, which are located outside of the Proposal Area.

The SoHI considered the proposed works would result in a negligible indirect (visual) impact on the 'Post Office and Residence' as the works would only be slightly visible, and neutral (visual) impacts on the other locally listed heritage item in Table 6-8, which is located outside of the Proposal Area and has no visual relationship with the proposed works.

Heritage impacts to Ourimbah Railway station

In Section 8 of the SoHI, a summary table of heritage impacts is provided. Generally, it is considered the proposal would result in neutral to negligible direct and indirect impacts to the heritage significance of Ourimbah Railway Station, except for the following proposed works:

- The modifications to the interior and exterior of the brick station building on Platform 1, including the widening of the entry to the Waiting Room and changes to platform and internal floor levels to provide equitable access. These changes would require the removal of original fabric and result in a moderate direct and indirect impact to the heritage significance of the station.
- The two new lifts would introduce two large structures that would be visible from the Pacific Highway, the Shirley Street commuter car park, and highly prominent from the platforms. These structures would have a minor to moderate indirect (visual) impact to the heritage significance of the station group.

- The proposed anti-throw screens to the new stair and lift landings, would result in neutral direct physical impact to the station group, and negligible indirect impacts to existing view lines towards station buildings,.

It is possible that new conduits for services would be required along the walls of the station buildings and may result in adverse indirect visual impacts on heritage detailing of the building (brickwork, timber sills, lintels).

The removal and replacement of existing ramps and the regarding works would not significantly alter the visual setting provided like-for-like and surface materials are utilised.

The vegetation proposed to be removed within the station are exotic species and no large trees dating from the early establishment of the station, or trees that make a significant contribution to the heritage setting of the station. The removal and replacement of vegetation would not significantly alter the visual setting of the station.

Heritage impacts to WW1 Monument

Section 8 of the SoHI provides a summary table of both direct (physical) impacts and indirect (visual) impacts on the WW1 Monument. Generally, it is considered the proposal would result in neutral to negligible direct and indirect impacts to the heritage significance of the WW1 Monument, except for the following proposed works:

- The removal of the modern sandstone blocks, which are aligned within the WW1 Monument would see the removal of a modern intrusive element to the heritage item, resulting in a neutral positive direct (physical) impact.
- Installation of the new western lift will impact view lines from the Pacific Highway towards the WW1 Monument and result in negligible to minor indirect (visual) impacts to the setting of the WW1 Monument.
- The removal of a section of the eastern dwarf wall of the WW1 Monument. Even though this element of the wall has been unsympathetically modified during repair, demolition of this part of the Monument would remove an element of symmetry and result in a moderate direct impact, and a minor indirect visual impact on the significance of the locally listed item.
- The removal of the mature tree in the north-east corner of the memorial park will increase the dominance of the western lift and result in a negligible to minor impact on the setting of the WW1 Monument.

Operation phase

The operation of the Proposal would not substantially impact non-Aboriginal or archaeological heritage. The minor and moderate adverse impacts on the fabric and setting of the heritage items within the Proposal Area, would be offset by the long-term benefits of improved accessibility, and removal of some detracting elements at Ourimbah Station:

6.5.3. Mitigation measures

A number of mitigation measures are proposed to minimise the impacts on heritage items and the heritage setting of Ourimbah Station, including:

- A suitably qualified and experienced heritage conservation architect would be engaged to provide ongoing heritage and conservation advice throughout detailed

design and any subsequent relevant design modifications, to ensure that the final design adheres to the relevant strategies and the design recommendations made in the SoHI (Artefact, 2020).

- A Photographic Archival Recording (PAR) must be prepared for the station, in accordance with relevant guidelines issues by Heritage NSW, DPC (formerly NSW Heritage Office).
- Consideration should be given to the provision of interpretation as part of the project, which would outline the history, associations and significance of Ourimbah Station and the wider Ourimbah area. Interpretive measures could involve interpretive signage, panels or displays at entry/exit points to the station, including on the proposed lift structure or within the station Waiting Rooms.
- preparing an Urban Design Plan, which will inform the detailed design, to address the integration with the surrounding built form and in particular the relationship to the memorial park
- preparing a Public Domain Plan to address materials, colours, landscaping, fencing and pavement treatments to complement the character of the heritage buildings.
- to avoid structural impacts as a result of vibration or direct contact with structures, the proposed work would be undertaken in accordance with the safe work distances outlined in the NVIA (Pulse Acoustics, 2020).

A number of mitigation measures addressing particular design elements to ensure the proposed works are sympathetic to existing heritage fabric and the heritage setting of the station buildings are also recommended in the SoHI (Artefact, 2020). These recommendations include consideration of the materiality of the lifts, stairway structures, throw screens, ramps and handrails, as well as design measures and construction practices for the proposed alterations to the heritage items.

Refer to Section 7.2 for a full list of proposed mitigation measures.

6.6. Biodiversity

An Arboricultural Impact Assessment Report (All Arbor Solutions, 2020) and a desktop review of applicable biodiversity and ecological databases was undertaken for the Proposal. This included a site inspection by a qualified arborist on 5 February 2020, along with a review of information contained in the following resources:

- NSW Biodiversity Conservation Division Atlas of NSW Wildlife (EES, 2020)
- Commonwealth Department of the Environment and Energy Protected Matters Search Tool (PMST) (DoEE, 2018)
- Biodiversity Conservation Division Threatened Species Profile Database.

6.6.1. Existing environment

The town of Ourimbah is located in a valley landscape surrounded by wet sclerophyll forests and forested wetlands to the east and west. However, the Proposal Area itself has been subject to significant disturbance due to its use as a railway station since the 1880s to the present day (refer Section 1). The railway use has removed or modified all of the endemic habitat. To the

east of Ourimbah Station is Bangalow Creek, with the margins of the creek densely vegetated comprising predominantly exotic species with some endemic species.

Flora

The majority of the Proposal area comprises sealed or paved surfaces. There are some garden beds at the station entries and margins of the station buildings, and the memorial park provides the only significant green space. A total of 19 trees were mapped within the Proposal Area, photographed, and their health and condition with their species, age class, and growing environment assessed. No native trees were identified.

Thirteen trees were found to be located within the memorial park adjacent the station on the Pacific Highway frontage. The remaining six trees were located within the garden beds around the entrance to the station off the Pacific Highway.



Figure 6-11 Tree location plans (Source All Arbor Solutions, 2020)

The trees in the memorial park are tall and mature with some likely dating from the establishment of the park and WW1 Monument in 1938.

No significant hollows or cavities that may be utilised as wildlife habitat were observed within any of the assessed trees.

None of the trees or vegetation within the Proposal Area are identified as threatened species or form part of an endangered ecological community. The site does not include or provide areas of habitat connectivity.

Fauna

The PMST identified within a one-kilometre buffer distance, two threatened ecological communities, 41 listed threatened species, 17 listed migratory species, one area of Commonwealth Land and 23 listed marine species.

The NSW EES BioNet Atlas for threatened species identified five records of species within 200m of the Proposal Area, including:

- Masked Owl recorded adjacent to the south of the footbridge, listed as Vulnerable under the NSW *Biodiversity Conservation Act 2016* (BC Act)
- Magenta Lilly Pilly recorded adjacent the Proposal Area on the eastern side of Bangalow Creek, listed as Endangered under the BC Act
- Bioconvex Paperbark adjacent the Proposal Area on the eastern side of Bangalow Creek, listed as Vulnerable under both the BC Act and the EPBC Act
- Flesh-footed Shearwater recorded around 155 metres northeast of the Proposal Area, listed as Vulnerable under the BC Act
- Eastern Bent-wing bat recorded around 155 metres northeast of the Proposal Area, listed as Vulnerable under the BC Act.

6.6.2. Potential impacts

Construction phase

Flora

The proposal would require the removal of five exotic trees, comprising four *Washingtonia filifera* (Fan Palm) and one *Sapium sebiferum* (Chinese Tallowwood). The fan palms (Trees 14, 15, 16, 19) are located within existing garden beds, within the proposed station entry and concourse area. The fan trees and the garden beds would need to be removed to allow for the new entry to Platform 2 and stairs from the Pacific Highway. The fan palms and garden beds are not considered to provide significant habitat or connectivity for native fauna (Figure 6-12).



Figure 6-12 Fan palms in existing garden bed proposed for removal

The Chinese Tallowwood (Tree 1) is located in the north-east corner of the memorial park (Figure 6-13). The proposed western lift, path and new stairs to the footbridge would result in a significant encroachment into the tree protection zone (TPZ) and would require removal of the tree. Two other exotic trees, a False Acacia (Tree 2) and a Leightons Green cypress (Tree 13), would also require selective pruning to accommodate the works.

Additional pruning of the Leightons Green cypress (Trees 13) would also be required to accommodate the temporary stair required to the footbridge during construction. The tree is not considered to provide significant habitat to native fauna and could be selectively pruned without endangering the tree.



Figure 6-13 Tree 2, *Sapium sebiferum* (Chinese Tallowwood)

The locations of the trees to be removed are identified by the red circles, and trees to be retained by the green circles, in Figure 6-14 below.

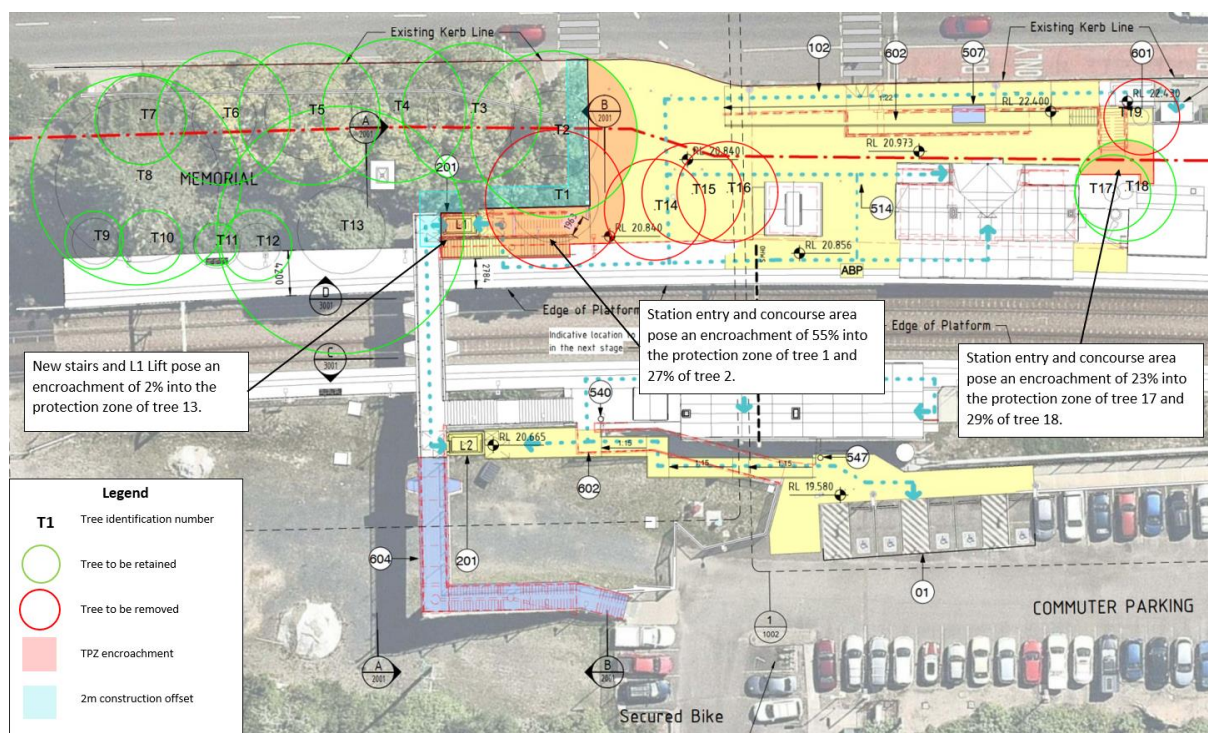


Figure 6-14 Trees to be retained and removed

The impacts of the removal of the five trees will be offset through the positive impact of trees being planted by TfNSW under the *Vegetation Offset Guide*, SD-087 (TfNSW, 2019c). Assessed on the basis of single tree offsets (TfNSW *Vegetation Offset Calculator*, DMS-SD-06/1.1), the Proposal including removal of five medium sized trees (15cm-60cm DBH), would require 20 locally native trees to be planted in the area.

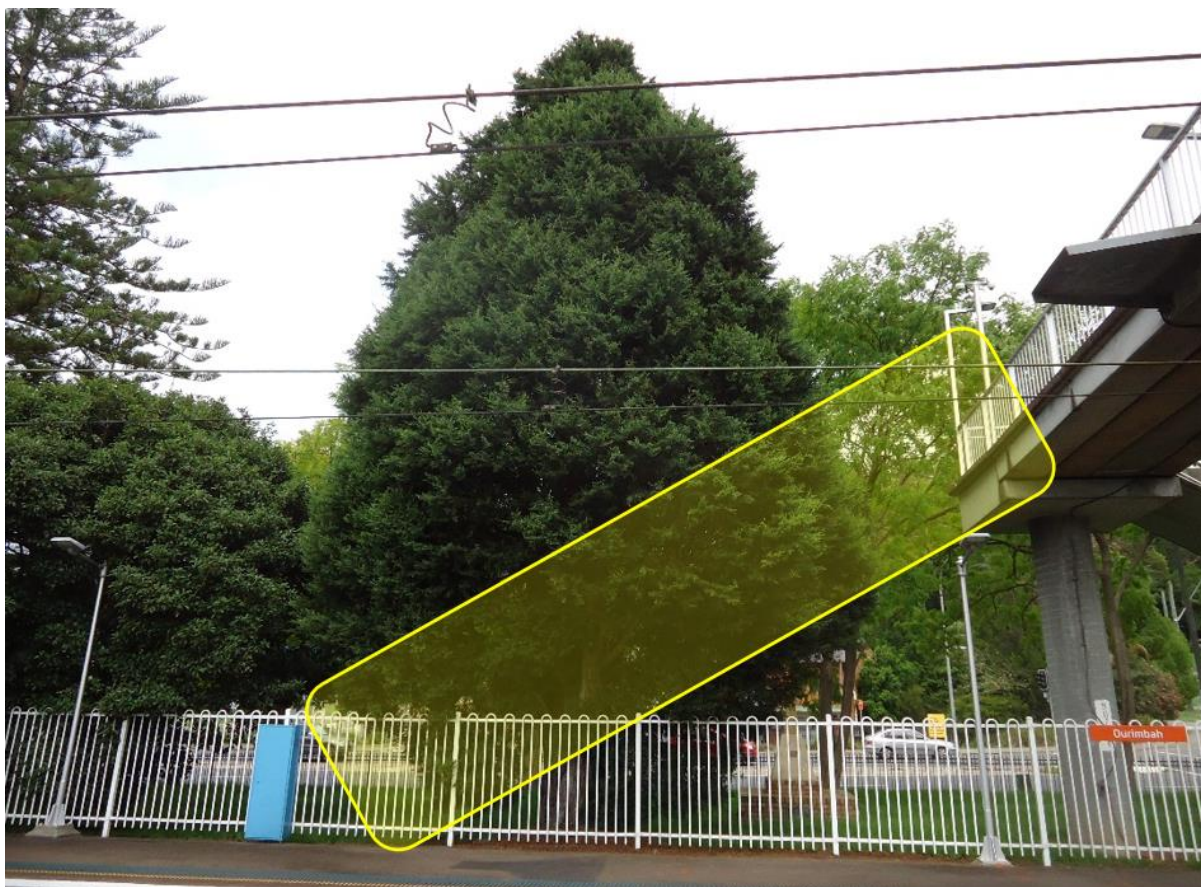


Figure 6-15 Tree 13, *Cupressocyparis leylandii* (Leightons Green). Selective branch reduction and removal may be required to establish temporary stair access (approximate location indicated by the yellow shading) to the pedestrian footbridge

Fauna

The area impacted by the Proposal has very limited habitat of value to native flora and fauna. No important habitat features such as hollow-bearing trees, fallen logs or termite mounds were identified in the Proposal Area.

While a threatened species (Masked Owl) has been recorded in the memorial park, the park contains only exotic trees and would provide only a marginal foraging habitat. The Proposal is unlikely to have any significant impact on the habitat of protected fauna, and would not impact habitat connectivity.

Key Threatening Processes

Key Threatening Processes are identified and listed under the EPBC Act. There are no relevant Key Threatening Processes that have the potential to affect biodiversity values within the Proposal area. The proposed vegetation removal is not of a scale to cause significant impacts.

Operation phase

Vehicle, plant and construction equipment would temporarily increase noise pollution within the Proposal area. This can cause disruption to normal fauna activity and lead to the departure of species from an area during construction.

The Proposal Area does not contain any significant vegetation or habitat and is highly modified. The Proposal would not have negligible impact on the habitat of protected fauna.

6.6.3. Mitigation measures

A number of mitigation measures are recommended to minimise potential impacts to biodiversity, including:

- a project arborist would be appointed to supervise works within tree protection zones, and tree sensitive excavation and construction methods are to be employed
- protection of the trees nominated for retention would be undertaken prior to site establishment and/or demolition works in line with *AS 4970-2009 Protection of Trees on Development Sites*, and the Arboricultural Impact Assessment (All Arbor Solutions, 2020)
- spoil excavated from the pier holes is not to be stockpiled or spread anywhere within a tree protection zone
- offsets and/or landscaping to would be undertaken in accordance with the TfNSW *Vegetation Offset Guide*, SD-087 (TfNSW, 2019c) for all trees removed. The Proposal would require the removal of five medium sized trees, which would be offset with 20 locally native species tree plantings
- all pruning works are to be undertaken by suitably qualified tree workers (minimum AQF level 3 or equivalent) in accordance with *AS4373-2007 Pruning of Amenity Trees and Safe Work Australia's Guide to Managing Risks of Tree Trimming and Removal Works*.

Refer to Section 7.2 for a full list of proposed mitigation measures.

6.7. Socio-economic impacts

6.7.1. Existing environment

Ourimbah Station is located in a narrow, mixed use area that flanks the transport infrastructure corridor of the Central Coast and Newcastle Line and the Pacific Highway. The area includes a mix of low-density residential, commercial and light industrial uses. There is also a cluster of educational establishments within a one kilometre radius of the station, including the Ourimbah Campus of TAFE NSW and the University of Newcastle, Central Coast Community College, Ourimbah Public School, and a Bible education centre.

Existing facilities for rail customers at the station include the heritage station buildings on each platform, a family accessible toilet on Platform 1, seating, Opal card readers, help points, and rubbish bins. Lighting is provided at the car park and throughout the station and platforms.

There are five formally designated accessible car spaces within the Shirley Street commuter car park, which are currently underutilised as the station is not currently accessible (refer Section 6.1). There is a sign posted bus stop with a shelter and a taxi area along the Pacific Highway, and a "pick up & set down area" on the southbound direction of the Pacific Highway, but no formally designated kiss and ride area within the commuter car park.

A review of the Australian Bureau of Statistics Census 2016 data (ABS, 2016) was undertaken for the joint area of Ourimbah-Fountaindale. The area of Ourimbah and the neighbouring Fountaindale had a population of 5014 people, with about 67 per cent of working age. People aged 65 years and over made up about 12 per cent of the population.

Of the 2467 people over the age of 15 in the workforce, on the day of the 2016 Census, 7.6 per cent of employed people used public transport (train, bus, ferry, tram/light rail) as at least one of their methods of travel to work, and about 75 per cent used car (either as driver or as passenger).

As a result of a disability, long term health condition (lasting six months or more) or old age, 4.2 per cent of residents within the Ourimbah-Fountaindale area reported at Census time the need for assistance.

According to the TfNSW Transport Performance and Analytics data, the average daily patronage at Ourimbah Station in 2017 was 726 passengers. The Proposal may promote a modal shift in transport and will enable increased use of the station by members of the community with a disability, limited mobility, parents/carers with prams, and customers with luggage.

6.7.2. Potential impacts

Construction phase

The construction phase of the Proposal has the potential to impact station customers, pedestrians, adjacent residents and motorists due to:

- temporary changes to access to, through and around the station
- temporary disruptions to local traffic movements near the station
- temporary loss of some parking in the car park during construction
- more traffic including truck movements delivering site materials, plant and equipment and removing waste
- minor increase in economic activity in the area due to patronage from construction staff
- construction noise, vibration, dust and visual impacts.

Station access would be maintained at all times during construction, including pedestrian access to both sides of the station. Temporary pedestrian diversions would be placed around the construction areas.

Vehicle access to the commuter car park would be retained during construction, however there would be temporary disruptions and unavailability of some parking spaces.

The TfNSW Social Procurement and Workforce Strategy outlines specific targets for a socially sustainable inclusive workforce. These requirements would be incorporated into contracts for the construction phase and would have positive impacts on the economic, social and environmental well-being of the LGA.

Operation phase

The Proposal would provide positive socio-economic benefits to Ourimbah and the wider area including:

- improved accessibility for Ourimbah Station customers due to the provision of new lifts, provision of equitable access to the station buildings, and provision of accessible paths to and around the station
- improved customer amenity and facilities at the station including improved wayfinding, CCTV and lighting
- potential increased use of public transport to and from Ourimbah.
- supporting and promoting the CCC *Disability Inclusion Plan* (CCC 2019), positively impacting its key objective of enabling people with disabilities to better access mainstream services, facilities and open spaces in the LGA.

It is noted that the Proposal will remove seating along Platform 1 to facilitate an accessible path of travel along the length of the Platform however the Proposal would provide equitable access to the station buildings which have seating available.

6.7.3. Mitigation measures

A number of mitigation measures are recommended to minimise potential impacts on the community with a particular focus on keeping the community informed, including:

- mitigation measures in respect to potential impacts to amenity (e.g. noise, dust and visual) as assessed in the relevant sections of this report and listed in Section 7.2 of this report
- development of a Community Liaison Management Plan (by the Construction Contractor prior to construction) which would outline methods for consultation with stakeholders during construction. The plan would also encourage feedback and facilitate opportunities for the community and stakeholders to have input where possible
- informing the community of construction progress, activities and impacts in accordance with the Community Liaison Management Plan
- consideration of any local events in Ourimbah during the construction period (such as the annual ANZAC Day and Remembrance Day service)
- providing contact details for a Project Infoline, a Construction Hotline (24-hour construction response line) and email address to enable ongoing stakeholder contact throughout the construction phase.

Refer to Section 7.2 for a full list of proposed mitigation measures.

6.8. Contamination, geology and soils

Information to describe the existing landform, geology and soils of the Proposal Area was obtained from the NSW Government's Spatial Information Exchange (Department of Finance, Services and Innovations 2019) and eSPADE (DPIE 2019) and CCC (2018) online mapping services.

6.8.1. Existing environment

Landform, geology and soils

Ourimbah Station is located at an elevation of about 23 metres above Australian Height Datum (AHD). The Proposal Area is relatively flat to gently sloping, falling from west to east and north to south.

The underlying geology of the area is Quaternary sediments—gravel, sand, silt and clay, and the soil landscape is mapped as Yarramalong (9131 ya) on the Gosford-Lake Macquarie 1:100,000 Sheets. Fertility of the soils is generally low to moderate.

The Proposal Area is identified as “Not assessed” in the mapping of Acid Sulfate Soils (ASS), included in the eSPADE Data and map layers. No ASS has been mapped within or near the Proposal Area on eSPADE or the CCC Online Mapping layer for ASS.

Contaminated land and hazardous materials

A search of the NSW Environment Protection Authority (EPA) Contaminated Land Database as of 18 November 2019 did not identify any records relating to, or proximate to, the subject site. The search returned two registered sites for the suburb of Ourimbah (Shell Coles Express Service Station at 78-80 Pacific Highway, and the Palmdale Service Centre at 3130 Pacific Highway) but neither are within one kilometre of the Proposal Area.

A preliminary contamination assessment of the Proposal area has been conducted (Cardno, 2020). The assessment found that within a one kilometre radius of the Proposal area there have been no notices issued by the EPA in relation to contaminated sites under the *Contaminated Land Management Act 1997*. Similarly there were no contaminated sites notified to the EPA, within a one 1-kilometre radius. There were no sites within a one kilometre radius with an active or formerly active licence under the *Protection of the Environmental Operations Act 1997* (PoEO Act).

As part of the preliminary contamination assessment a borehole was advanced to a depth of 12 metres below ground level and 12 soil samples taken. The soil sampling analysis returned no Contaminants of Potential Concern (CoPC) above the adopted Ecological screening criteria for Commercial/Industrial (ESL/EIL D). However, an isolated piece of asbestos was identified at the soil surface at one location.

The preliminary contamination assessments review of historical data and intrusive investigation identified no CoPC within the Proposal area. However, the assessment highlighted the limited nature of the intrusive investigations and the risk of encountering contaminants due to historical rail-related activities.

The AS 4482.1-2005 - *Guide to the investigation and sampling of sites with potentially contaminated soil - Non-volatile and semi-volatile compounds* lists the chemicals used by specific industries. The Standard lists the following chemicals that are commonly associated with railway yards:

- hydrocarbons
- arsenic
- phenolics
- heavy metals

- nitrates and ammonia.

The Ourimbah railway station was opened in 1887. There is a risk of encountering these typical rail-related contaminants and hazardous materials within the Proposal Area.

Given the age of the buildings and other elements at the station there is also the potential for asbestos materials and lead-based paint to be encountered.

6.8.2. Potential impacts

Construction phase

Soil erosion and sedimentation

Excavation and earthworks needed to construct the Proposal are described in Section 3.3.4. The proposal involves minimal excavation, but if unmanaged the Proposal could result in the following nuisance and impacts:

- dust generation from excavation and vehicle movements over exposed soil
- an increase in sediment loads entering the stormwater system and/or local runoff
- erosion of exposed soil and any stockpiled materials.

The Proposal Area is flat to very gently sloping and would not be expected to give rise to any significant erosion or sediment runoff issues. It is expected that these risks would be adequately managed through the implementation of standard measures as outlined in the 'Blue Book' - *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004).

Contaminated land and hazardous materials

Excavation has the potential to expose contaminants, which if not appropriately managed, can present a health risk to construction workers and the community. The exposure of contaminants could also pose an environmental risk if they were to enter nearby waterways through the stormwater infrastructure.

The Proposal has the potential to disturb asbestos containing material and other hazardous substances (such as lead paint) from the upgrades and refurbishment of the station buildings. There is also potential for construction activities to result in the contamination of soil through accidental fuel or chemical spills from construction plant and equipment.

Operation phase

There would be no operational risk to geology and soil, or operational risk of contamination as a result of the Proposal.

6.8.3. Mitigation measures

As part of the CEMP (to be prepared by the Construction Contractor prior to the commencement of construction), a site-specific Erosion and Sediment Control Plan would be prepared and implemented in accordance with the 'Blue Book' - *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004). The Erosion and Sediment Control Plan would be established prior to the commencement of construction and be updated and managed throughout according to the activities occurring during construction.

An environmental risk assessment would be undertaken prior to construction and would include a section on contamination as per the TfNSW Standard Requirements. Measures to mitigate potential impacts from contaminated soil and materials would include an unexpected contamination finds procedure and Waste Management Plan, as part of the CEMP. All waste would be managed in accordance with relevant legislation.

Appropriate mitigation measures would be implemented to manage hazardous substances during demolition works. This would include the removal of hazardous materials from the structure by appropriately licensed asbestos/hazardous waste removalists and in accordance with relevant legislation and guidelines.

Refer to Section 7.2 for a full list of proposed mitigation measures.

6.9. Hydrology and water quality

6.9.1. Existing environment

The nearest natural watercourse to the Proposal is Bangalow Creek which is located around 20 metres east of the Proposal Area. There is also an unnamed natural watercourse around 150 metres to the southwest of the Proposal Area.

Water runoff in the Proposal Area is generally towards the east and via Bangalow Creek from south to north.

The CCC online mapping (Figure 6-16) does not identify the station buildings or platforms as a flood planning area, however the very eastern edge of the commuter car park and a portion of the proposed construction compound adjacent Bangalow Creek, are mapped as a flood planning area.



Figure 6-16 Extract from the CCC online maps (CCC, 2020) depicting modelled 1 per cent AEP flood event (shaded grey) with respect to the Proposal Area (indicated by the red polygon).

The Bangalow Creek and Cut Rock Creek Floodplain Management Study (Webb, McKeown & Associates Pty Ltd, 1997) identified that an area adjacent to Ourimbah Railway Station (Mill Street Industrial Area – Referred to as Flood Management Area W4) would have a Medium to High Flood Hazard. During a 1% Annual Exceedance Probability (AEP) flood event, flood waters were predicated to rise to up to one metre above ground level in the Mill Street Industrial Area. The study establishes a Low Floor Level for new buildings of 16.7 metres AHD for the W4 area.

A preliminary contamination assessment of the Proposal area has been conducted (Cardno, 2020). As part of the preliminary contamination assessment a borehole was advanced to a depth of 12 metres below ground level and 12 soil samples taken. The borehole encountered groundwater at a depth of 6.8 metres.

6.9.2. Potential impacts

Construction phase

Potential for soil erosion and sedimentation is discussed in Section 6.8. Uncontrolled runoff through disturbed areas during construction may contribute to reduced water quality downslope of the station. However, the slope of the area is low and proposed excavated areas confined.

The maximum depth of excavation needed to install the lift pit would be approximately 2.5 metres. Given the depth of nearby bores the likelihood of intercepting groundwater is considered low. However, should groundwater be encountered during excavation works, groundwater would be managed in accordance with the requirements of the *Waste Classification Guidelines* (EPA, 2014) and Transport for NSW's *Water Discharge and Reuse Guideline* (TfNSW, 2017b).

Pollutants such as fuel, chemicals or wastewater from accidental spills could potentially reach nearby stormwater drains and flow into downstream waterways, impacting on water quality and ecological values. Soil disturbance during construction work also has the potential to impact on local water quality and downstream ecological values as a result of erosion and run off sedimentation. The temporary construction compound is in close proximity to Bangalow Creek, so these potential risks need to be carefully considered in a CEMP. Based on the information available the station and proposed work areas are unlikely to be at risk of inundation during a flooding event. Nonetheless, flooding affecting areas adjacent the commuter car park and the temporary construction compound should be duly considered in the preparation of any CEMP and consultation carried out with CCC in accordance with ISEPP requirements.

Operation phase

The Proposal would not affect hydrology or water quality during operation. Most of the work would be located in existing paved areas. Existing stormwater management measures would remain in place and are not proposed to be upgraded.

A 1% AEP flood event is not likely to result in flood waters significantly affecting the Proposal Area or affecting the access and operation of the station.

6.9.3. Mitigation measures

Site-specific erosion and sediment control plans would be prepared, implemented and maintained as outlined in Section 6.8. Construction activities would be undertaken in compliance with the TfNSW *Water Discharge and Reuse Guideline* (TfNSW, 2019d).

Other mitigation measures that would be required for construction and detailed in a CEMP include regular vehicle and equipment maintenance, sediment fencing, along with spill kits and spill response procedures.

Surface water runoff from paved areas would be directed to existing the stormwater management system around the station.

If groundwater is encountered during excavations, groundwater would be managed in accordance with the requirements of the *Water Management Act 2000*, *Waste Classification Guidelines* (EPA, 2014) and Transport for NSW's *Water Discharge and Reuse Guideline* (TfNSW, 2017b).

Refer to Section 7.2 for a full list of proposed mitigation measures.

6.10. Bushfire

An assessment of the sites hazard potential was carried out through review of the CCC online mapping tools and fact sheets and the NSW Rural Fire Service (RFS) online bushfire prone land tool.

6.10.1. Existing environment

Parts of the Proposal Area are identified as being within a Bushfire Prone Land (Vegetation Buffer) area and adjacent to Bushfire Prone Land (Vegetation Category 2) in the mapping layers for bushfire prone land available on the CCC Online Mapping tool (Figure 6-17). Similarly, the NSW RFS online bushfire prone land tool identifies the Proposal Area as being Bushfire Prone Land.



Figure 6-17 Extract from the CCC online maps (CCC, 2020) depicting bushfire prone land with respect to the Proposal Area (indicated by the blue polygon).

6.10.2. Potential impacts

Bushfire

The yellow Category 2 areas in Figure 6-17 are considered to be low fire risk vegetation, while the orange Category 1 areas are high fire risk vegetation. Bushfire has the potential to impact both the construction and operation phase of the Proposal. During construction, fire may occur at the station or within the construction compound. This may lead to damage and/or destruction

of key equipment and resources to be used for the Proposal. Smoke generated by fires may also impact worker health and safety.

During operation the Proposal would not increase the potential bushfire hazard. As is the accepted practice, in the event of a fire the lifts should not be used. The other accessibility upgrades would improve movement and safety for commuters to the station.

6.10.3. Mitigation measures

Mitigation measures are recommended, including as part of the CEMP, the incorporation of site-specific procedures to prevent and respond to bush fire incidents.

Refer to Section 7.2 for a full list of proposed mitigation measures.

6.11. Waste

During construction of the Proposal, the following waste materials would be generated:

- asphalt and concrete
- surplus building materials
- excavated spoil
- building material wastes (including metals, timbers, plastics, packaging)
- electrical wiring and conduit waste (from electrical connections and utility relocation)
- hazardous wastes (chemicals)
- demolition waste from the existing ramps, stairs, and concrete slabs and relocated services
- general waste, including food scraps generated by construction workers.

Efforts to minimise the volume of surplus materials would be undertaken during planning and design of construction activities. . Waste management would be undertaken in accordance with the WARR Act and a Waste Management Plan would be prepared as part of the CEMP which would include measures to minimise waste, outline methods of disposal, reuse and recycling and monitoring, as appropriate.

Waste management targets in accordance with the ISCA IS Rating Tool v1.2 (2017) would be developed for the Proposal and would include reuse and recycling.

A hazardous materials survey in accordance with AS2601:2001 Demolition of Structures would be undertaken by an appropriately qualified scientist prior to the demolition of any structures. Any removal of any hazardous material is to be undertaken in accordance with applicable EPA and SafeWork NSW guidelines.

The Proposal would not result in major changes to operational waste management arrangements.

Refer to Section 7.2 for a full list of proposed mitigation measures.

6.12. Air quality

The main influences on air quality in Ourimbah are from vehicle emissions, domestic wood heating, local industries and bushfire. Sensitive receivers in the vicinity of the Proposal include residential properties, workers and educational establishments in Ourimbah and customers at Ourimbah Station.

Impacts to air quality during construction are expected from:

- increased vehicle activity around the station
- operation of construction plant and equipment
- dust from demolition and excavation for the works.

Impacts would be localised and temporary and are not expected to affect sensitive receivers. Provided that measures to protect local air quality and minimise generation of dust are implemented.

Removal of any potentially hazardous materials would be completed in accordance with applicable EPA and WorkCover guidelines, to minimise risk to human health or the environment.

The Proposal would not result in any change to air quality during operation as the land use remains the same.

The Transport Access Program aims to improve accessibility to public transport and transfer between modes of transport. The Proposal would contribute to the long-term positive impacts on air quality associated with increased use of public transport and a net reduction in private vehicle reliance.

Refer to Section 7.2 for a full list of proposed mitigation measures.

6.13. Sustainability

The design of the Proposal would be based on the principles of sustainability, including targeting an 'Excellent' rating under the ISCA Infrastructure Sustainability Rating Tool v1.2. Refer to Section 3.2.3 for more information regarding the application of the ISCA IS Rating Scheme.

Further positive impacts in relation to climate change and sustainability associated with the Proposal include encouraging a reduction in private vehicle use and increase the accessibility of public transport services.

6.14. Climate change

The dynamic nature of our climate system indicates a need to focus attention on how to adapt to the changes in climate and understand the limitation of adaptation.

The assessment included analysis of the Australian Bureau of Meteorology Climate Change Projections. The projections relevant to the Proposal Area are made for the East Coast South Cluster. The key messages for the East Coast South Cluster are expected increases in average temperatures, more hot days and warm spells, decreases in winter rainfall,

increased intensity of rainfall events, mean sea level will continue to rise, and harsher fire weather conditions (BOM, 2019).

To address the impacts of increasing temperatures and more hot days, the following measures should be reviewed for feasibility during detailed design:

- lift design to consider roofing, cladding materials, glazing, insulation and ventilation to reduce heat loads, potential cooling systems, and protections for electrical equipment
- introduction of replacement landscaping to reduce thermal mass and increase shading
- avoid use of metal outdoor furniture
- provide sufficient protections for electrical systems (such as for proposed lifts) to meet expectations of future temperature increases
- designed with appropriate fire protection measures.

6.15. Greenhouse gas emissions

An increase in greenhouse gas emissions, primarily carbon dioxide, would be expected during construction of the Proposal due to exhaust emissions from construction machinery and vehicles transporting materials and personnel.

The detailed design process would undertake a compliant carbon footprinting exercise in accordance with TfNSW's Carbon Estimate and Reporting Tool Manual (TfNSW, 2017) or equivalent. The carbon footprint would be used to inform decision making in design and construction.

Due to the small scale of the Proposal and the short-term temporary nature of the individual construction work, it is considered that greenhouse gas emissions resulting from the construction of the Proposal would be minimal. Furthermore, greenhouse gas emissions generated during construction would be kept to a minimum through the implementation of the standard mitigation measures detailed in Section 7.2.

It is anticipated that, once operational, the Proposal may result in an increase in use of public transport and a relative decrease in use of private motor vehicles by commuters to travel to and from Ourimbah. A modal shift in transport usage may reduce the amount of fuel consumed by private motor vehicles with a corresponding relative reduction in associated greenhouse gas emissions in the local area.

6.16. Cumulative impacts

Cumulative impacts occur when two or more projects are carried out concurrently and in close proximity to one another. The impacts may be caused by both construction and operational activities and can result in a greater impact to the surrounding area than would be expected if each project was undertaken in isolation. Multiple projects undertaken at a similar time/similar location may also lead to construction fatigue, particularly around noise, traffic and air quality impacts, if not appropriately managed.

A search of the DPIE Major Projects Register and Central Coast Council Development Application Register on 14 April 2020 identified that no major development applications or development applications are listed for the Proposal Area, or in proximity, at this time.

TfNSW currently has other projects in planning, construction and nearing completion within the Central Coast area including upgrades at Waratah, Wyee and proposed upgrade to the Niagara Park Station.

Other TfNSW projects in an around the Central Coast area which may create cumulative impacts include signalling modifications associated with the New Intercity Fleet projects, and road upgrade works to the Pacific Highway between Narara and Lisarow. The construction of these projects would be managed by TfNSW to ensure the community is informed of all work, and to coordinate work. Required rail shutdown work would where possible occur simultaneously and be coordinated with any other construction activities in the area, to minimise cumulative construction impacts such as traffic and noise.

Traffic associated with other project construction work is not anticipated to have a significant impact on the surrounding road network. Operational traffic and transport impacts would have a negligible impact on the performance of the surrounding road network.

Based on this assessment, it is anticipated that the cumulative impacts would be negligible, with the implementation of consultation with relevant stakeholders and associated mitigation measures in Chapter 7.

The potential cumulative impacts associated with the Proposal would be further considered as the design develops and as further information regarding the location and timing of potential developments is released. Environmental management measures would be developed and implemented as appropriate.

7. Environmental management

This chapter of the REF identifies how the environmental impacts of the Proposal would be managed through environmental management plans and mitigation measures.

7.1. Environmental management plans

A CEMP for the construction phase of the Proposal would be prepared in accordance with the requirements of the TfNSW EMS. The CEMP would provide a centralised mechanism through which all potential environmental impacts relevant to the Proposal would be managed and outline a framework of procedures and controls for managing environmental impacts during construction.

The CEMP would incorporate but not be limited to the following key sub plans:

- Construction Traffic Management Plan (CTMP)
- Construction Noise and Vibration Management Plan (CNVMP)
- Erosion and Sediment Control Plan (ESCP)
- Sustainability Management Plan (SMP).

The CEMP would also include at a minimum all environmental mitigation measures identified below in Section 7.2 any conditions from licences or approvals required by legislation, and a process for demonstrating compliance with such mitigation measures and conditions.

7.2. Mitigation measures

Mitigation measures for the Proposal are listed in Table 7-1. These proposed measures would minimise the potential adverse impacts of the Proposal identified in Chapter 6, should the Proposal proceed.

Table 7-1 Proposed mitigation measures

No.	Mitigation measure
General	
1.	A Construction Environmental Management Plan (CEMP) would be prepared by the Construction Contractor in accordance with the relevant requirements of <i>Guideline for Preparation of Environmental Management Plans</i> , Department of Infrastructure, Planning and Natural Resources, 2004) for approval by TfNSW, prior to the commencement of construction and following any revisions made throughout construction.
2.	A project risk assessment including environmental aspects and impacts would be undertaken by the Construction Contractor prior to the commencement of construction and documented as part of the CEMP.
3.	An Environmental Controls Map (ECM) would be developed by the Construction Contractor in accordance with TfNSW's <i>Guide to Environmental Controls Map</i> (TfNSW, 2019e) for approval by TfNSW, prior to the commencement of construction and following any revisions made throughout construction.
4.	Prior to the commencement of construction, all contractors would be inducted on the key project environmental risks, procedures, mitigation measures and conditions of approval.

No.	Mitigation measure
5.	Site inspections to monitor environmental compliance and performance would be undertaken during construction at appropriate intervals.
6.	Service relocation would be undertaken in consultation with the relevant authority. Contractors would mark existing services on the ECM to avoid direct impacts during construction.
7.	Any modifications to the Proposal, if approved, would be subject to further assessment and approval by TfNSW. This assessment would need to demonstrate the Proposal, as modified, is not likely to significantly affect the environment.
Traffic and transport	
8.	<p>Prior to the commencement of construction, a Construction Traffic Management Plan (CTMP) would be prepared as part of the CEMP and would include at a minimum:</p> <ul style="list-style-type: none"> ensuring adequate road signage at construction work sites to inform motorists and pedestrians of the work site ahead to ensure that the risk of road accidents and disruption to surrounding land uses is minimised maximising safety and accessibility for pedestrians and cyclists ensuring adequate sight lines to allow for safe entry and exit from the site ensuring access to railway stations, businesses, entertainment premises and residential properties (unless affected property owners have been consulted and appropriate alternative arrangements made) managing impacts and changes to on and off-street parking and requirements for any temporary replacement provision parking locations for construction workers away from stations and busy residential areas and details of how this will be monitored for compliance routes to be used by heavy construction-related vehicles to minimise impacts on sensitive land uses and businesses details for rail replacement bus stops if required, including appropriate signage to direct patrons, in consultation with the relevant bus operators. Particular provisions would also be considered for the accessibility impaired measures to manage traffic flows around the area affected by the Proposal, including as required regulatory and direction signposting, line marking and variable message signs and all other traffic control devices necessary for the implementation of the CTMP. <p>Consultation with the relevant roads authorities would be undertaken during preparation of the CTMP. The performance of all project traffic arrangements must be monitored during construction.</p>
9.	Communication would be provided to the community and local residents to inform them of changes to parking, pedestrian access and/or traffic conditions including vehicle movements and anticipated effects on the local road network relating to site works.
10.	Road Occupancy Licences for temporary road closures would be obtained, where required.
Landscape and visual amenity	
11.	<p>An Urban Design Plan (UDP) 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:</p> <ul style="list-style-type: none"> the appropriateness of the proposed design with respect to the existing surrounding landscape, built form, behaviours and use-patterns (including consideration of Crime

No.	Mitigation measure
	<p>Prevention Through Environmental Design principles). This is to include but not be limited to:</p> <ul style="list-style-type: none"> ○ 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.
12.	<p>A Public Domain Plan (PDP) 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 PDP, at a minimum, would address the following:</p> <ul style="list-style-type: none"> • 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 v1.2 • identification of design and landscaping aspects that will be open for stakeholder input, as required • minimise new fencing, any new fencing should be a darker colour • ensure materials and colours within the pedestrian areas complement - and do not dominate or detract from - the character of the heritage buildings and station setting.
13.	<p>All permanent lighting would be designed and installed in accordance with the requirements of standards relevant to <i>AS 1158 Road Lighting</i> and <i>AS 4282 Controlling the Obtrusive Effects of Outdoor Lighting</i>.</p>
14.	<p>Worksite compounds would be screened with shade cloth (or similar material, where necessary) to minimise visual impacts from key viewing locations.</p>
15.	<p>The appearance of temporary hoardings and fencing along the Pacific Highway would be improved by incorporating large-scale printed graphics (graphics may include images of the Proposal or the existing heritage station buildings).</p>
16.	<p>Temporary hoardings, barriers, traffic management and signage would be removed when no longer required.</p>
17.	<p>During construction, graffiti would be removed in accordance with TfNSW's Standard Requirements.</p>

No.	Mitigation measure
18.	During detailed design investigate opportunities to minimise permanent new fencing and adopt a dark recessive colour for new fencing (e.g. dark grey, charcoal)
Noise and vibration	
19.	Prior to commencement of works, a Construction Noise and Vibration Management Plan (CNVMP) would be prepared and implemented in accordance with the requirements of the <i>Interim Construction Noise Guideline</i> (Department of Environment and Climate Change, 2009), <i>Construction Noise and Vibration Strategy</i> (TfNSW, 2019a) and the Noise and Vibration Impact Assessment for the Proposal (Pulse, 2020). The CNVMP would take into consideration measures for reducing the source noise levels of construction equipment by construction planning and equipment selection where practicable.
20.	<p>The CNVMP would outline measures to reduce the noise impact from construction activities. Reasonable and feasible noise mitigation measures which would be considered, include:</p> <ul style="list-style-type: none"> regularly training workers and contractors (such as at the site induction and toolbox talks) on the importance of minimising noise emissions and how to use equipment in ways to minimise noise avoiding any unnecessary noise when carrying out manual operations and when operating plant ensuring spoil is placed and not dropped into awaiting trucks avoiding/limiting simultaneous operation of noisy plant and equipment within discernible range of a sensitive receiver where practicable switching off any equipment not in use for extended periods e.g. heavy vehicles engines would be switched off whilst being unloaded avoiding deliveries at night/evenings wherever practicable no idling of delivery trucks keeping truck drivers informed of designated vehicle routes, parking locations and acceptable delivery hours for the site minimising talking loudly; no swearing or unnecessary shouting, or loud stereos/radios onsite; no dropping of materials from height where practicable, no throwing of metal items and slamming of doors.
21.	<p>The CNVMP would include measures to reduce the construction noise and vibration impacts from mechanical activities. Reasonable and feasible noise mitigation options which would be considered, include:</p> <ul style="list-style-type: none"> maximising the offset distance between noisy plant and adjacent sensitive receivers and determining safe working distances using the most suitable equipment necessary for the construction works at any one time directing noise-emitting plant away from sensitive receivers regularly inspecting and maintaining plant to avoid increased noise levels from rattling hatches, loose fittings etc using non-tonal reversing/movement alarms such as broadband (non-tonal) alarms or ambient noise-sensing alarms for all plant used regularly onsite (greater than one day), and for any out of hours works use of quieter and less vibration emitting construction methods where feasible and reasonable.
22.	Works would generally be carried out during standard construction hours (i.e. 7.00 am to 6.00 pm Monday to Friday; 8.00 am to 1.00 pm Saturdays). Any works outside these hours may be undertaken if approved by TfNSW and the community is notified prior to these works

No.	Mitigation measure
	commencing. An Out of Hours Work application form would need to be prepared by the Construction Contractor and submitted to the TfNSW Environment and Planning Manager for any works outside standard hours.
23.	As per the <i>Construction Noise and Vibration Strategy</i> (TfNSW, 2019a), construction activities with special audible characteristics (high noise impact, intensive vibration, impulsive or tonal noise emissions) would be limited to standard hours, starting no earlier than 8am; and to continuous blocks not exceeding three hours each with a minimum respite from those activities and works of not less than one hour between each block, unless otherwise approved by TfNSW.
24.	Work would be conducted behind temporary hoardings/screens wherever practicable. The installation of construction hoarding would take into consideration the location of residential receivers to ensure that 'line of sight' is broken, where feasible.
25.	Vibration resulting from construction and received at any structure outside of the Proposal Area would be managed in accordance with: <ul style="list-style-type: none"> for structural damage vibration - British Standard BS 7385-2:1993 <i>Evaluation and measurement for vibration in buildings Part 2</i> and German Standard DIN 4150:Part 3 – 1999: <i>Structural Vibration in Buildings: Effects on Structures</i> for human exposure to vibration the acceptable vibration - values set out in the <i>Environmental Noise Management Assessing Vibration: A Technical Guideline</i> (Department of Environment and Conservation, 2006) which includes British Standard BS 7385-2:1993 <i>Guide to Evaluation of Human Exposure to Vibration in Buildings (1 Hz to 80 Hz)</i>.
26.	Property conditions surveys would be completed prior to any vibration intensive work (such as piling or jack hammering) being carried out at or within the minimum distances set out in the TfNSW <i>Construction Noise and Vibration Strategy</i> (TfNSW, 2019a) and the <i>Noise and Vibration Impact Assessment</i> (Pulse, 2020).
27.	Affected pre-schools, schools, universities and other identified sensitive receivers are to be consulted in relation to noise mitigation measures to identify any noise sensitive periods, e.g. exam periods. As much as reasonably possible noise intensive construction works in the vicinity of affected educational buildings are to be minimised.
Aboriginal heritage	
28.	All construction staff would undergo an induction in the recognition of Aboriginal cultural heritage material. This training would include information such as the importance of Aboriginal cultural heritage material and places to the Aboriginal community, as well as the legal implications of removal, disturbance and damage to any Aboriginal cultural heritage material and sites.
29.	If unforeseen Aboriginal objects are uncovered during construction, the procedures contained in TfNSW's <i>Unexpected Heritage Finds Guideline</i> (TfNSW, 2019b) would be followed, and works within the vicinity of the find would cease immediately. The Construction Contractor would immediately notify the TfNSW Project Manager and TfNSW Environment and Planning Manager so they can assist in co-ordinating next steps which are likely to involve consultation with an Aboriginal heritage consultant, the OEHL and the Local Aboriginal Land Council. If human remains are found, work would cease, the site secured and the NSW Police and the OEHL notified. Where required, further archaeological investigations and an Aboriginal Heritage Impact Permit would be obtained prior to works recommencing at the location.
Non-Aboriginal heritage	

No.	Mitigation measure
30.	A heritage induction would be provided to workers prior to construction, informing them of the guidelines to follow if unanticipated heritage items or deposits are located during construction.
31.	<p>Works to heritage items must be undertaken in accordance with the recommendations made in the SoHI (Artefact, 2020).</p> <p>In the event of an inconsistency between these conditions and the SoHI, the prevailing measure will be decided by TfNSW.</p>
32.	A suitably qualified and experienced heritage conservation architect would be engaged to provide ongoing heritage and conservation advice throughout detailed design and any subsequent relevant design modifications. The nominated heritage conservation architect would provide specialist advice throughout the detailed design phase to ensure that the final design adheres to the relevant strategies and the design recommendations made in the SoHI (Artefact, 2020).
33.	<p>Archival recording of the station as a whole would be undertaken prior to the commencement of construction following NSW Heritage Division guidelines <i>Photographic recording of heritage items using film or digital capture</i> (NSW Heritage Office, 2006) and <i>How to prepare archival records</i> (NSW Heritage Office, 1998). Copies would be provided to Sydney Trains for future reference. In particular, the following elements would be concentrated on:</p> <ul style="list-style-type: none"> • the station buildings • the station group and setting • the WW1 memorial
34.	A s170A notification would be submitted to the NSW Heritage Council no less than 14 days prior to commencement of works for the proposal. TfNSW would complete the Sydney Trains s170A notification letter template for Sydney Trains to review and sign as landowner delegate prior to the notification being submitted to Heritage NSW, Department of Premier and Cabinet (Heritage NSW, DPC).
35.	In the event that any unanticipated archaeological deposits are identified within the project site during construction, the procedures contained in TfNSW's <i>Unexpected Heritage Finds Guideline</i> (TfNSW, 2019b) would be followed, and works within the vicinity of the find would cease immediately. The Construction Contractor would immediately notify the TfNSW Project Manager and the TfNSW Environment and Planning Manager so they can assist in co-ordinating the next steps which are likely to involve consultation with an archaeologist and OEH. Where required, further archaeological work and/or consents would be obtained for any unanticipated archaeological deposits prior to works recommencing at the location.
36.	Opportunities for heritage interpretation should be considered and implemented as part of the proposal. Interpretations would outline the history, associations and significance of Ourimbah Station and the wider Ourimbah area and could involve interpretive signage, panels or displays at entry/exit points to the station, including on the proposed lift structure or within the station Waiting Rooms.
37.	Detailed design information for conduit design, CCTV camera positioning, new lighting, and any associated cabling must be assessed by a heritage conservation architect prior to commencement of works. Detailed design information for conduit design must be provided for any heritage consistency assessment undertaken for the project to ensure that cumulative impacts to significant fabric and potential archaeological resources are assessed and these impacts minimised.
38.	Sydney Trains are planning to conduct works on the War Memorials at Ourimbah Station in accordance with their <i>Condition Assessment & Conservation Management Strategy Sydney Trains War Memorials</i> (March 2020). Works in this strategy will be considered in final design and Sydney Trains will be consulted about these works.

No.	Mitigation measure
39.	<p>During design development, consideration would be given to developing heritage sympathetic design, particularly in relation to the size, form and materials used for the lift structures. Heritage sympathetic design considerations would include:</p> <ul style="list-style-type: none"> • The materiality of the lift structure, should incorporate glazing and material finishes that are as recessive as possible to ensure that adverse visual impacts to Ourimbah Station are minimised • If a temporary stair structure is required it would be positioned so that the structure would not impact upon the physical fabric of the WW1 Monument during construction • Removal of existing skirting boards from the existing Waiting Room of the platform building 1 would be conducted with care to avoid damaging the original walls of the building. The proposal would include provision for the storage of the boards and would endeavour to reinstate the existing skirting boards upon completion of the lowering of the Waiting Room floor • In order to mitigate any impact upon the entrance and façade of the building, the existing stone threshold would be sympathetically removed, stored and reintroduced to the same entryway upon completion of the floor lowering • Final drawings are to depict the proposed widening of the doorways in both plan and elevation and indicate the amount of material (brickwork, timber door architraves etc) to be removed from these openings. Any works to these areas would be minimal and sympathetically designed to contribute to the heritage significance of the platform building • Final drawings are to indicate the proposed new floor level of the Waiting Room in elevation. If original fabric is located (original timber joists and floorboards) below the current laminate finish, these elements would be carefully removed and reinstated at the new level. If there is no evidence of these elements, the proposed new floor finish would be constructed of a sympathetic material, such as timber floorboards • Final drawings would indicate the proposed new material to infill the void between the walls and new floor level of the Waiting Room. Particular attention would be paid to the installation of this material and its connection to the extant fireplace within the room. Opportunities exist to construct a small podium to support the fireplace elements • If the detailed designs required the closure of the ticket window within the Waiting Room it is recommended that the window be locked rather than infilled to preserve the original intention of the station ticket window within the context of the Waiting Room • The proposed works to the existing southern ramp of the Platform 2 station building would provide sympathetic protection measures to the external timber façade and detailing of the building during the proposed works to the area in order to avoid direct impact to the heritage fabric of the building • The removal and upgrade of the existing internal telephone box, located within the General Waiting Room, would utilise existing wall penetrations in order to prevent further direct impacts to the heritage fabric of the building • The regrading works for the platform would avoid impacting existing door thresholds of the station platform building. Platform regrading works must avoid impacting the brick retaining wall coping of the platform edges • Proposed platform regrading would not cover over or obscure original sub-floor ventilation grates of the platform building. If platform elevations are adjusted that they would cover grates, a small cavity would be provided in the platform surface near the grates so that they can continue to allow air flow to freely ventilate.

Biodiversity

No.	Mitigation measure
40.	Construction of the Proposal must be undertaken in accordance with TfNSW's <i>Vegetation Management (Protection and Removal) Guideline</i> (TfNSW, 2019f) and TfNSW's <i>Fauna Management Guideline</i> (TfNSW, 2019f).
41.	All workers would be provided with an environmental induction prior to commencing work onsite. This induction would include information on the protection measures to be implemented to protect vegetation, penalties for breaches and locations of areas of sensitivity.
42.	Disturbance of vegetation would be limited to the minimum amount necessary to construct the Proposal. Trees/vegetation nominated to be removed in the Arboricultural Impact Assessment Report (All Arbor Solutions, 2020) would be clearly demarcated onsite prior to construction, to avoid unnecessary vegetation removal. Trees to be retained would be protected through temporary protection measures discussed below.
43.	Tree Protection Zones (TPZs) would be established around trees to be retained, as nominated in the Arboricultural Impact Assessment Report (All Arbor Solutions, 2020). Tree protection would be undertaken in line with <i>AS 4970-2009 Protection of Trees on Development Sites</i> and would include exclusion fencing of TPZs.
44.	In the event of any tree to be retained becoming damaged during construction, the Construction Contractor would immediately notify the TfNSW Project Manager and TfNSW Environment and Planning Manager to coordinate the response which may include contacting an arborist to inspect and provide advice on remedial action, where possible.
45.	Should the detailed design or onsite works determine the need to remove or trim any additional trees, which have not been identified in the REF, the Construction Contractor would be required to complete TfNSW's Tree Removal Application Form and submit it to TfNSW for approval.
46.	Weed control measures, consistent with TfNSW's <i>Weed Management and Disposal Guideline</i> (TfNSW, 2019l), would be developed and implemented as part of the CEMP to manage the potential dispersal and establishment of weeds during the construction phase of the project. This would include the management and disposal of weeds in accordance with the <i>Biosecurity Act 2015</i> .
47.	A project arborist is to be appointed to supervise works within tree protection zones, and tree sensitive excavation and construction methods are to be employed.
48.	Spoil excavated from the pier holes is not to be stockpiled or spread anywhere within a tree protection zone.
49.	Offsets and/or landscaping would be undertaken in accordance with the <i>TfNSW Vegetation Offset Guide, SD-087</i> (TfNSW, 2019c) for all trees removed. The Proposal would require the removal of five medium sized trees, which would be offset with 20 locally native species tree plantings
50.	All pruning works are to be undertaken by suitably qualified tree workers (minimum AQF level 3 or equivalent) in accordance with <i>AS4373-2007 Pruning of Amenity Trees</i> and <i>Safe Work Australia's Guide to Managing Risks of Tree Trimming and Removal Works</i> .
Socio-economic	
51.	Social Procurement and Workforce criteria for the Proposal would be established to encourage the Construction Contractor to purchase goods and services locally, helping to ensure the local community benefits from the construction of the Proposal.
52.	Feedback through the submissions process would be encouraged to facilitate opportunities for the community and stakeholders to have input into the project, where practicable.

No.	Mitigation measure
53.	A Community Liaison Plan would be prepared prior to construction to identify all potential stakeholders and best practice methods for consultation with these groups during construction. The plan would also encourage feedback and facilitate opportunities for the community and stakeholders to have input into the project, where practicable.
54.	Contact details for a 24-hour construction response line, Project Infoline and email address would be provided for ongoing stakeholder contact throughout the construction phase.
55.	The community would be kept informed of construction progress, activities and impacts in accordance with the Community Liaison Plan to be developed prior to construction.
Soils and water	
56.	Prior to commencement of works, a site-specific Erosion and Sediment Control Plan would be prepared in accordance with the 'Blue Book' <i>Managing Urban Stormwater: Soils and Construction</i> (Landcom, 2004) and updated throughout construction so it remains relevant to the activities. The Erosion and Sediment Control Plan measures would be implemented prior to commencement of works and maintained throughout construction.
57.	Erosion and sediment control measures would be established prior to any clearing, grubbing and site establishment activities and would be maintained and regularly inspected (particularly following rainfall events) to ensure their ongoing functionality. Erosion and sediment control measures would be maintained and left in place until the works are complete and areas are stabilised.
58.	Vehicles and machinery would be properly maintained and routinely inspected to minimise the risk of fuel/oil leaks. Construction plant, vehicles and equipment would also be refuelled offsite, or in a designated refuelling area.
59.	All fuels, chemicals and hazardous liquids would be stored away from drainage lines, within an impervious bunded area in accordance with Australian Standards, EPA Guidelines and TfNSW's <i>Chemical Storage and Spill Response Guidelines</i> (TfNSW, 2019g).
60.	Adequate water quality and hazardous materials procedures (including spill management procedures, use of spill kits and procedures for refuelling and maintaining construction vehicles/equipment) would be implemented in accordance with relevant EPA guidelines and the TfNSW <i>Chemical Storage and Spill Response Guidelines</i> (TfNSW, 2019g) during the construction phase. All staff would be made aware of the location of the spill kits and be trained in how to use the kits in the case of a spill.
61.	In the event of a pollution incident, works would cease in the immediate vicinity and the Construction Contractor would immediately notify the TfNSW Project Manager and TfNSW Environment and Planning Manager. The EPA would be notified by TfNSW if required, in accordance with Part 5.7 of the POEO Act.
62.	The existing drainage systems would remain operational throughout the construction phase.
63.	Should groundwater be encountered during excavation works, groundwater would be managed in accordance with the requirements of the <i>Waste Classification Guidelines</i> (EPA, 2014) and TfNSW's <i>Water Discharge and Reuse Guideline</i> (TfNSW, 2019d).
Air quality	
64.	Air quality management and monitoring for the Proposal would be undertaken in accordance with TfNSW's <i>Air Quality Management Guideline</i> (TfNSW, 2019h).
65.	Methods for management of emissions would be incorporated into project inductions, training and pre-start/toolbox talks.

No.	Mitigation measure
66.	Plant and machinery would be regularly checked and maintained in a proper and efficient condition. Plant and machinery would be switched off when not in use, and not left idling.
67.	Vehicle and machinery movements during construction would be restricted to designated areas and sealed/compacted surfaces where practicable.
68.	<p>To minimise the generation of dust from construction activities, the following measures would be implemented:</p> <ul style="list-style-type: none"> • apply water (or alternate measures) to exposed surfaces (e.g. unpaved roads, stockpiles, hardstand areas and other exposed surfaces) • cover stockpiles when not in use • appropriately cover loads on trucks transporting material to and from the construction site and securely fix tailgates of road transport trucks prior to loading and immediately after unloading • prevent mud and dirt being tracked onto sealed road surfaces.
Waste and contamination	
69.	<p>The CEMP must address waste management and would at a minimum:</p> <ul style="list-style-type: none"> • identify all potential waste streams associated with the works and outline methods of disposal of waste that cannot be reused or recycled at appropriately licensed facilities • detail other onsite management practices such as keeping areas free of rubbish • specify controls and containment procedures for hazardous waste and asbestos waste • outline the reporting regime for collating construction waste data.
70.	An appropriate Unexpected Finds Protocol, considering asbestos containing materials and other potential contaminants, would be included in the CEMP. Procedures for handling asbestos containing materials, including licensed contractor involvement as required, record keeping, site personnel awareness and waste disposal to be undertaken in accordance with WorkCover requirements, the PoEO Act, WARR Act and other relevant guidelines.
71.	All spoil to be removed from site would be tested to confirm the presence of any contamination. Any contaminated spoil would be disposed of at an appropriately licensed facility.
72.	All spoil and waste must be classified in accordance with the <i>Waste Classification Guidelines Part 1: Classifying waste</i> (EPA, 2014) prior to disposal.
73.	Any concrete washout would be established and maintained in accordance with TfNSW's <i>Concrete Washout Guideline</i> – (TfNSW, 2019j) with details included in the CEMP and location marked on the ECM.
74.	A hazardous materials survey in accordance with <i>AS2601:2001 Demolition of Structures</i> would be undertaken by an appropriately qualified scientist prior to the demolition of any structures. Any removal of any hazardous material is to be undertaken in accordance with applicable EPA and SafeWork NSW guidelines.
Sustainability, climate change and greenhouse gases	
75.	Detailed design and construction of the Proposal would target a rating of 'Excellent' using the ISCA Infrastructure Sustainability Rating Scheme (v1.2)

No.	Mitigation measure
76.	The detailed design process would undertake compliant carbon footprinting exercise in accordance with TfNSW's <i>Carbon Estimate and Reporting Tool Manual</i> (TfNSW, 2019k). The carbon footprint would be used to inform decision making in design and construction.
77.	The CEMP environmental risk assessment is to include site-specific procedures addressing the risks of bushfire and high intensity rainfall events.
Cumulative	
78.	During construction, the works would be coordinated with any construction activities associated with proposed developments nearby including TfNSW construction work (and any other relevant work). Consultation and liaison would occur with Central Coast Council, Sydney Trains, and other stakeholders.

8. Conclusion

This REF has been prepared in accordance with the provisions of Section 5.5 of the EP&A Act, taking into account to the fullest extent possible, all matters affecting or likely to affect the environment as a result of the Proposal.

The Proposal would provide the following benefits:

- improved and equitable access to Ourimbah Station for customers resulting from the installation of two lifts and the connection of both platforms to the footbridge
- improved and equitable entries to the station through provision of compliant ramps from both the Pacific Highway entrance and commuter car park.
- improved and equitable access to station building waiting rooms and facilities
- improved amenity and safety for customers at the station resulting from improved lighting, public address system, card readers, and CCTV.

The following key impacts have been identified should the Proposal proceed:

- temporary changes to pedestrian movements to, from and around the station during construction works associated with the lift installations, which would be managed via the implementation of a Construction Traffic Management Plan and Community Liaison Management Plan
- impacts to the visual character of Ourimbah Station due to the installation of the new lifts, entrance ramps, stairs and regrading, and the removal of landscaping including a mature tall tree and, removal of a small portion of the WW1 memorial (dwarf wall). The visual impacts have been assessed as ranging from negligible to high-moderate. Visual changes would be most prominent from the Pacific Highway and residential properties west of the station across the Pacific Highway. The detailed design and integration with the surrounding built form would be addressed in the preparation of an Urban Design Plan. In addition, a Public Domain Plan would be prepared to address materials, colours, landscaping, fencing and pavement treatments to complement the character of the heritage buildings and link with the existing public domain
- temporary noise and vibration impacts during construction. These impacts were assessed as variable and dependent on the construction stage and hours of work. Impacts would be mitigated through the implementation of a range of mitigate measures proposed in the NVIA (Pulse Acoustic 2020) and the CNVS (TfNSW, 2019a)
- negligible to minor adverse impacts to the heritage setting of the station and the WW1 Monument as a result of the introduction of new elements (including lifts and ramps) and the removal of one mature tree
- moderate adverse direct impacts to the heritage fabric of the Station building on Platform 1 through the introduction of DSAPT compliant access to the waiting room, and to the WW1 Monument through the removal of the eastern dwarf wall
- removal of five medium sized trees, which would be replaced in accordance with the *TfNSW Vegetation Offset Guide* (TfNSW, 2019c).

This REF has considered and assessed these impacts in accordance with clause 228 of the EP&A Regulation and the requirements of the EPBC Act (refer to Chapter 6, Appendix A and

Appendix B). Based on the assessment contained in this REF, it is considered that the Proposal is not likely to significantly affect the environment. Accordingly, an EIS is not required, nor is the approval of the Minister for Planning and Public Places.

The Proposal has also taken into account the principles of ESD and sustainability (refer to Section 4.3 and Section 6.13). These would be considered further during the detailed design, construction and operational phases of the Proposal. This would ensure the Proposal is delivered to maximum benefit to the community, is cost effective and minimises any adverse impacts on the environment.

References

- All Arbor Solutions, 2020, *Arboricultural Impact Assessment*, Sydney
- Artefact Heritage Services, 2020, *TAP 3.0 Ourimbah Railway Station, Statement of Heritage Impact*, Sydney
- Aurecon, 2018, *TAP3 Ourimbah Station, Ourimbah Station Scoping Design Report*, Sydney
- Bureau of Meteorology, 2019, <http://www.bom.gov.au/water/groundwater/explorer/>
- Cardno, 2020 Ourimbah Park Station – Preliminary Contamination Assessment Report, 14 February, 2020 ISD-18-7619B/002, Sydney
- Central Coast Council online mapping, 2020, <https://maps.centralcoast.nsw.gov.au/public/>
- Department of Environment and Climate Change, 2009, *Interim Construction Noise Guideline*, Sydney
- Department of Environment and Conservation, 2006, *Assessing Vibration: A Technical Guideline*, Sydney
- Department of Environment, Climate Change and Water, 2011, *NSW Road Noise Policy*, Sydney
- Department of the Environment and Heritage, 2006, *Climate Change Impacts and Risk Management; A Guide for Business and Government*, Australian Greenhouse Office, Canberra
- Department of Planning, Infrastructure and Environment, 2016, *Central Coast Regional Plan 2036*, Sydney
- Department of Infrastructure, Planning and Natural Resources, 2004, *Guideline for Preparation of Environmental Management Plans*, Sydney
- Envisage Consulting, *Ourimbah Station Upgrade, Landscape Character and Visual Impact Assessment*, Sydney
- EPA, 2014, *Waste Classification Guidelines*, Sydney
- EPA, 2017, *Noise Policy for Industry*, Sydney
- Infrastructure NSW, 2018, *Building Momentum – State Infrastructure Strategy 2018-2038*, Sydney
- Ministry of Transport, 2008, *Guidelines for the Development of Public Transport Interchange Facilities*, Sydney
- Landcom, 2004, *Managing Urban Stormwater: Soils and Construction, Volume - 4th Edition* ('Blue Book'), Sydney
- NSW Heritage Office & Department of Urban Affairs and Planning, (1996, revised 2002) *NSW Heritage Manual*, Sydney
- NSW Heritage Office, 1998, *How to Prepare Archival Records of Heritage Item*, Sydney
- NSW Heritage Office, 2001, *Assessing Significance for Historical Archaeological Sites and 'Relics'*, Department of Planning, Sydney
- NSW Heritage Office, 2002, *Conservation Management Documents – Guidelines on Conservation Management Plans and Other Management Documents*, Sydney

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- NSW Heritage Office, 2005, *Interpreting Heritage Places and Items Guidelines*, Sydney
- NSW Heritage Office, 2006, *Photographic Recording of Heritage Items Using Film or Digital Capture*, Sydney
- OEH, 2010, *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW South Wales*, Sydney
- OEH, 2011, *Guidelines for Consultants Reporting on Contaminated Sites*, Sydney
- Pulse Acoustic Consultancy, 2020, *Ourimbah Station Upgrade - Noise and Vibration Impact Assessment*, Sydney
- TfNSW, 2017, *Disability Inclusion Action Plan 2018-2022*, Sydney
- TfNSW, 2018a, *Future Transport 2056*, TfNSW, Sydney
- TfNSW, 2018b, (former RMS) *Guideline for Landscape Character and Visual Impact Assessment, Environmental Impact Assessment Practice Note EIA-N04*, Sydney
- TfNSW, 2019a, *Construction Noise and Vibration Strategy*, Sydney
- TfNSW, 2019b, *Unexpected Heritage Finds Guideline*, SD-115, Sydney
- TfNSW, 2019c, *Vegetation Offset Guide*, SD-087, Sydney
- TfNSW, 2019d, *Water Discharge and Reuse Guideline*, SD-024, Sydney
- TfNSW, 2019e, *Guide to Environmental Controls Map*, SD-015, Sydney
- TfNSW, 2019f, *Fauna Management Guideline*, SD-113, Sydney
- TfNSW, 2019g, *Chemical Storage and Spill Response Guidelines*, SD-066, Sydney
- TfNSW, 2019h, *Air Quality Management Guideline*, SD-107, Sydney
- TfNSW, 2019i, *Vegetation Management (Protection and Removal) Guideline*, SD-111/5.0, Sydney
- TfNSW, 2019j, *Concrete Washout Guideline*, Sydney
- TfNSW, 2019k, *Carbon Estimate and Reporting Tool Manual*, Sydney
- TfNSW, 2019l, *Weed Management and Disposal Guideline*, SD-110, Sydney
- WSP, 2011, *Environmental Site Assessment 73 Pacific Highway, Ourimbah, NSW*, North Sydney

Appendix A Consideration of matters of National Environmental Significance

The table below demonstrates TfNSW's consideration of the matters of NES under the EPBC Act to be considered in order to determine whether the Proposal should be referred to Commonwealth Department of the Environment and Energy.

Matters of NES	Impacts
Any impact on a World Heritage property? There are no World Heritage properties in the vicinity of the Proposal Area.	Nil
Any impact on a National Heritage place? There are no National Heritage places in the vicinity of the Proposal Area.	Nil
Any impact on a wetland of international importance? There are no wetlands of international importance within the Proposal Area or in the vicinity of the Proposal.	Nil
Any impact on a listed threatened species or communities? It is unlikely that the Proposal would significantly affect any threatened species or communities.	Negligible
Any impacts on listed migratory species? It is unlikely that the development of the Proposal would significantly affect any migratory species as there is no suitable habitat for any listed migratory species.	Negligible
Does the Proposal involve a nuclear action (including uranium mining)? The Proposal does not involve a nuclear action.	Nil
Any impact on a Commonwealth marine area? There are no Commonwealth marine areas in the vicinity of the Proposal.	Nil
Does the Proposal involve development of coal seam gas and/or large coal mine that has the potential to impact on water resources? The Proposal is for a transport facility and does not relate to coal seam gas or mining.	Nil
Additionally, any impact (direct or indirect) on Commonwealth land? Proposal would not be undertaken on or near Commonwealth Land.	Nil

Appendix B Consideration of clause 228

The table below demonstrates TfNSW's consideration of the specific factors of clause 228 of the EP&A Regulation in determining whether the Proposal would have a significant impact on the environment.

Factor	Impacts
<p>(a) Any environmental impact on a community?</p> <p>During the construction phase of the Proposal, there would be some temporary impacts to the community resulting from increased traffic, noise and reduced visual amenity. Mitigation measures outlined in Section 7.2, would be implemented to manage and minimise negative impacts during construction.</p> <p>The operation of the Proposal would result in improved accessibility to and within the Ourimbah Station precinct.</p>	<p>Short-term, minor adverse</p> <p>Long-term positive</p>
<p>(b) Any transformation of a locality?</p> <p>The Proposal would include the introduction of new visible elements to the station precinct (including two new lifts, ramps, station entries), and the removal of trees, which would have a visual impact, including to the heritage setting. However, the changes are consistent with a railway facility and would not lead to a major transformation of the locality. In addition, a range of design mitigation has been progressed to minimise impacts (refer Section 7.2).</p>	<p>Minor neutral</p>
<p>(c) Any environmental impact on the ecosystem of the locality?</p> <p>Five medium trees are proposed to be removed. The removal of these trees is not considered to have an impact on the overall ecological values of the area as it would not result in the loss of a naturally occurring Plant Community Type. Replacement plantings would be carried out as per the <i>TfNSW Vegetation Offset Guide</i>.</p>	<p>Minor adverse</p>
<p>(d) Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality?</p> <p>There would be some minor temporary impacts during construction particularly in relation to noise, traffic, access and visual amenity.</p> <p>The introduction of the lifts will alter the aesthetic of the location but is not anticipated to result in any significant adverse impacts.</p>	<p>Minor</p>
<p>(e) Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations?</p> <p>The Proposal would provide a positive contribution to the area as it provides equitable access to the station platforms and improves amenity of the station for all customers.</p> <p>The two new lifts would have a minor to moderate indirect (visual) impact to the heritage significance of the station group</p> <p>The proposed changes to waiting room entry on Platform 1, and to the WW1 Monument will have neutral to moderate impacts on the heritage fabric of these heritage items.</p>	<p>Positive</p> <p>Moderate adverse</p> <p>Moderate adverse</p>

Factor	Impacts
<p>(f) Any impact on the habitat of protected fauna (within the meaning of the <i>National Parks and Wildlife Act 1974</i>)?</p> <p>The Proposal Area does not contain any significant vegetation or habitat and is highly modified. The proposal would not have any impact on the habitat of protected fauna.</p>	Nil
<p>(g) Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?</p> <p>Despite a listed sighting of a Masked Owl in the memorial park, no important habitat features were identified. The Proposal is considered unlikely to have any impact on endangering any species of animal, plant or other form of life, whether living on land, in water, or in the air.</p>	Negligible
<p>(h) Any long-term effects on the environment?</p> <p>The Proposal is unlikely to have any long-term adverse effects on the environment.</p>	Negligible
<p>(i) Any degradation of the quality of the environment?</p> <p>The Proposal is unlikely to have any degradation of the quality of the environment.</p>	Nil
<p>(j) Any risk to the safety of the environment?</p> <p>The Proposal is unlikely to cause any pollution or safety risks to the environment provided the recommended mitigation measures are implemented.</p>	Nil
<p>(k) Any reduction in the range of beneficial uses of the environment?</p> <p>The Proposal is unlikely to have any reduction in the range of beneficial uses of the environment.</p>	Nil
<p>(l) Any pollution of the environment?</p> <p>The Proposal is unlikely to cause any pollution of the environment provided the recommended mitigation measures are implemented. Specific management measures would be implemented to manage asbestos and other hazardous materials that may be encountered during construction or demolition works.</p>	Nil
<p>(m) Any environmental problems associated with the disposal of waste?</p> <p>The Proposal is unlikely to cause any environmental problems associated with the disposal of waste.</p> <p>All waste would be managed and disposed of appropriately with a site-specific Waste Management Plan prepared as part of the Construction Environmental Management Plan. Mitigation measures would be implemented to ensure waste is reduced, reused or recycled where practicable.</p>	Nil
<p>(n) Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply?</p> <p>The Proposal is unlikely to increase demands on resources that are, or are likely to become, in short supply.</p>	Nil
<p>(o) Any cumulative environmental effect with other existing or likely future activities?</p>	Nil

Factor	Impacts
Cumulative effects of the Proposal are described in Section 6.13, Where feasible, environmental management measures would be co-ordinated to reduce any cumulative construction impacts. The Proposal is unlikely to have any significant adverse long-term impacts.	
(p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions?	
The Proposal would not affect or be affected by any coastal processes or hazards.	Nil