More Trains, More Services – Wollongong Stabling Yard and Platform Extension

Transport for NSW

Visual Impact Assessment

Final

01 August 2019

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1. Introduction

1.1 Background

Transport for NSW (TfNSW) proposes to deliver service improvements on the T4 Illawarra Line, South Coast Line and T8 Airport Lines. The improvements would deliver greater capacity, reliability and connectivity for customers. To achieve this, TfNSW has developed the More Trains, More Services (MTMS) Program (the Program).

The Program includes works to enable the introduction of a new fleet of intercity trains on the South Coast Line. The new intercity fleet (NIF) will improve accessibility, enhance safety and improve comfort by providing a range of modern features.

As part of the Program, TfNSW proposes to upgrade Wollongong Stabling Yard and extend the platforms at Wollongong Station (the Proposal) as part of the enabling works for the introduction of the NIF.

TfNSW is the government agency responsible for the delivery of major transport infrastructure projects in NSW and is the proponent for the Proposal. The main features of this Proposal are:

- Extension of the southern (Country) ends of Platforms 1 and 2 by about nine metres
- Reconfiguration of the railway tracks between the station and the stabling yard
- Modifications to overhead wiring, underground utilities and signal relocation
- Rebuilding a currently unused siding including new overhead wire structures
- Cleaning and tamping of ballast on all other sidings
- Relocation of signals and overhead wiring masts
- Installation of walkways for use by drivers, cleaners and maintenance crews
- New fencing and drainage works
- Yard facilities including lighting and closed-circuit television.

This visual impact assessment has been prepared to inform the Review of Environmental Factors (REF) for the Proposal. It reviews the proposed visual changes associated with the Proposal in views from the public realm and assessed the magnitude of those changes in the context of these views.

Chapter 2 outlines the methodology used within this report.

2. Methodology

The methodology used within this visual impact assessment includes the following steps:

- Describe the subject site and the surrounding area
- Describe the visual components of the Proposal
- Describe the planning instruments that are relevant to views, the setting of the project and visual impact
- Assess the visual impact of the Proposal from publicly accessible locations.

The following will briefly describe the rationale and scale of effects to assess the visual impact of the Proposal.

2.1 Assessment of visual impact from publicly accessible locations

An assessment of the visual impact from publicly accessible locations is partly based on photographs which show the view of the existing area and impact that the Proposal would have on this view and the following four criteria.

The overall visual impact is arrived at through the ranking of the key visual criteria to determine the scale of effects.

The visual impact of a development is affected by the following criteria:

- Visibility of the project
- The distance of the viewer from the development
- The nature of the surrounding landscape
- The number of viewers able to see the development.

Accordingly, a description of the overall effect of the development on each viewpoint has been assessed by evaluating the value of each of those criteria, ranking those as either negligible, low, medium, or high, and subsequently making an assessment as to the overall effect by balancing each of those criteria.

2.1.1 Scale of effects

The overall visual impact of the Proposal has been assessed using the following scale:

- Negligible adverse effect – minute level of effect that is barely discernible over ordinary day to day effects
- Low adverse effect – adverse effects that are noticeable but that will not cause any significant adverse impacts
- Medium adverse effect – significant effects that may be able to be mitigated/remedied
- High or unacceptable adverse effect – extensive adverse effects that cannot be avoided, remedied or mitigated.

Negligible adverse effect: The assessment of a “negligible” level of impact is usually based on distance. That is, the development is at such a distance that, when visible in good weather, the proposed changes would be barely discernible in the view. Sometimes the screening afforded by vegetation can lead to a similar level of assessment as can a minor change to an existing development. For example, where a small extension is added to a large existing development the impact from a particular location could be a negligible effect.

Low adverse effect: The assessment of a “low” level of impact can be derived if the rating of any one of three factors, that is distance, viewer numbers and landscape sensitivity, is assessed as low. The reasoning for this “low” assessment is as follows:

- If the distance to the development is great, then even if the viewer numbers and the landscape sensitivity were high, the overall visual impact would be low because the development would be only just visible in the landscape

- If viewer numbers were low (i.e. few people can see the development from the nominated publicly accessible viewpoint) then even if the development was close to the viewpoint and the landscape sensitivity was high, the overall visual impact would be low because the change to the landscape is not seen by many viewers. In a visual assessment it is important to differentiate between a “visual impact” and a “landscape impact”. Viewer numbers are important in the assessment of a visual impact, as if few people see a particular development then the visual impact is low, even though there may be a significant change to the landscape and hence a large landscape impact
- If landscape sensitivity was low (i.e. within a highly human modified landscape) then even if the development was in close proximity to the viewpoint and it was visible to a large number of viewers, the overall visual impact would be low because the viewpoint is not in a landscape of such sensitivity that further change would be unacceptable.

Medium adverse effect: A medium adverse effect may occur when more than one of the three assessment criteria are considered as higher than “low” or the visual effects are able to be mitigated / remedied from an initial rating of High. This will of course be moderated by the context of the existing view and the modifications within the landscape.

High or unacceptable adverse effect: The assessment of a “high” or unacceptable adverse effect from a publicly accessible viewpoint usually requires the assessment of all three criteria to be high. For example, a highly sensitive landscape, viewed by many people, with the development in close proximity would lead to an assessment of unacceptable adverse effect. This assessment is also usually based on the assumption that such a view cannot be mitigated. An example may be a well frequented viewpoint in a National Park, with a development located in close proximity to a viewpoint that currently overlooks what appears to be a natural, pristine, un-modified landscape. Landscape treatment would block this view and even though it would mitigate the view to the development such treatment would be unacceptable as it would also block the view from the lookout.

The proposed works at Wollongong Stabling Yard and Wollongong Station would be undertaken entirely within the existing station and stabling yard and are on land zoned for railway infrastructure within the Wollongong Local Environmental Plan 2009 (Wollongong LEP).

Mitigation measures may be considered to modify the visual impact from a publicly accessible viewpoint, where the visual impact assessment is high or from other sensitive viewing locations. For example, roadside planting along a section of road may significantly reduce the visual impact of a development.

2.1.2 Publicly accessible viewpoints

The sensitivity of viewpoints within the public domain will vary. For example, a location at a lookout or recognised vantage point will be given a high sensitivity, where transient views from the surrounding road network or places of employment may have a low sensitivity to visual change.

2.1.3 Assessment of visual impact from residential properties

For residential viewpoints the landscape sensitivity is always rated as “high”, recognising that people feel most strongly about the view from their house and areas of attached outdoor living spaces.

2.2 Photomontage preparation

Photomontages provide a visual basis on which to interpret the proposed changed brought about by the Proposal in views that are relevant to stakeholders, the community and decision makers.

There are two components to preparing photomontages that are useful for this purpose. The first is technical accuracy, which includes alignment and scaling with existing features and elements in that view. The second is the perceptual accuracy of the original photograph which is achieved through appropriate lens and camera body settings and the reproduction of the images themselves.

2.2.1 Computer modelling and the wireframe model

Cadastral data as well as the proposed development are modelled within a computer program (3D Max). A virtual camera is set up in the model at the GPS coordinates for each of the photographs that are being used within the panorama.

The digital model or wireframe view is then overlaid on the photographic panorama. Known points within survey information such as topography, building locations or other infrastructure are registered into the base photographs (or other predetermined points). For technical accuracy, these points must align. This verifies the location and apparent height and scale of the proposed development.

After the background reference points have been aligned, the wireframe is removed, leaving only the proposed development, which is rendered.

Photomontages are prepared with a 60-degree field of view, which follows the parameters of human vision. Wider panoramas are also used to indicate the full extent of the proposed development where appropriate.

2.2.2 Lens size and photos used within the photomontages

Photomontages typically show the changes in a 60-degree horizontal field of view. The 60-degree horizontal field of view represents the central cone of view in which symbol recognition and colour discrimination can occur. When defining vertical field of view, either 10-degree or 15-degree can represent the central field of view of human vision as shown in Figure 2-1.

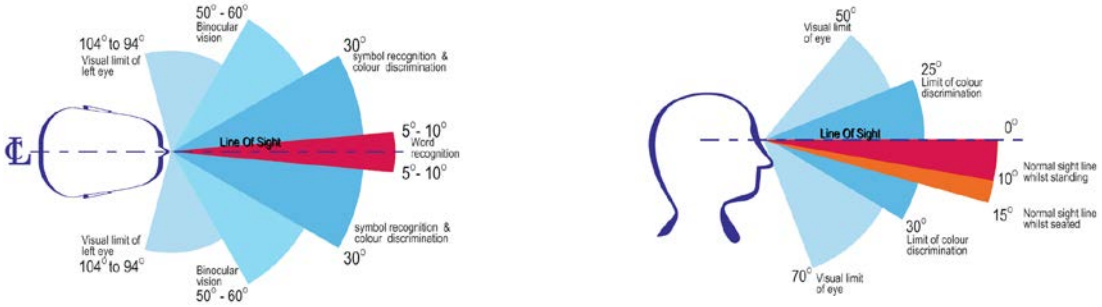


Figure 2-1: Horizontal and vertical field of view

(Source: Human Dimension and Interior Space, Julius Panero & Martin Zellnik, Witney Library of Design,1979)
Similar data can be found in the more recent publication entitled 'The Measure of Man and Woman, Revised Edition', Henry Dreyfuss Associates, John Whiley & Sons, 2012.

The 60-degree horizontal field of view is important if the photomontage images are to be relied upon to represent the change in views over varying distances. The A3 photomontages of the proposed development included in the appendices of the report, include a 60-degree horizontal field of view (refer to Appendix A). One of the sheets within the photomontage set shows a wireframe view of the computer model to illustrate how the photomontages were derived. Vertical 'poles' within this wireframe are merely points on the landscape such as a group of trees, a corner of an existing building etc., which allow the computer model (prepared in 3D Studio Max) and the photograph to be accurately aligned. This ensures that the proposed development is accurately located within the photograph and then the rest of the model is removed, and the development is rendered into the image.

2.2.3 Photographs

A 70 millimetre lens on a Nikon D850 digital camera has a picture angle of 26.5 degrees and a horizontal angle of view of approximately 21.3 degrees (Source: https://imaging.nikon.com/lineup/dslr/basics/19/01.htm).

Four photographs overlapped ⅓ to create an image approximately the same as the central cone of view of human vision, i.e. 50-60 degrees horizontal and 15 degrees vertical. Figure 2-2 demonstrates this theory.

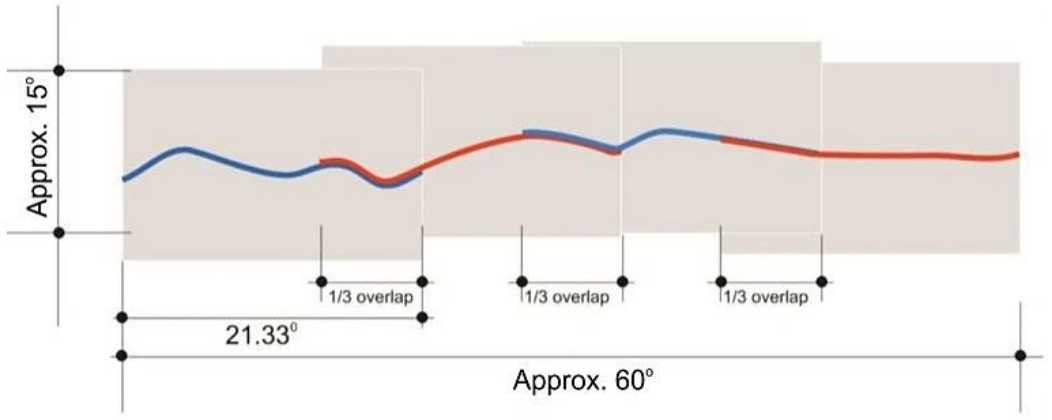


Figure 2-2: Photomontage layout

2.2.4 GPS coordinates

The Nikon D850 camera also records the GPS coordinates as part of the metadata. GPS coordinates are also taken based on a separate hand-held GPS and the locations from which the photographs were taken is also marked on a digital map at the location of each photograph.

2.2.5 Photomontages

One photomontage has been prepared from a public viewpoint at Wollongong Station. This viewpoint is indicative of the views from in and around the station. This photomontage is appended to this report (refer to Appendix A for an A3 size photomontage with a 60-degree field of view).

It is recognised that the small photographs and the A3 photomontages included within this assessment are not indicative of the actual visual impact. The A3 image, which is appended to this report (refer to Appendix A), are clearer than the smaller images in the text.

However, to view the photomontages in a way that they appear perceptually accurate, they need to be printed and viewed on A0 sized sheets and held at arms' length. When viewed at A0 the photomontages are representative of the level of visual alteration.

3. Proposal description

This section describes the components of the Proposal that may bring about a change in views when looking towards Wollongong Station and Wollongong Stabling Yard. The description is based on the concept design for the Proposal. Further changes and alterations may arise through detailed design.

3.1 Scope of works

The Proposal includes works at Wollongong Station and Wollongong Stabling Yard, which is located south of Wollongong Station public platform areas. The proposed works at the station and the stabling yard are described below.

Wollongong Station

Works specific to the Wollongong Station public platforms are:

- Extension of the southern (Country) ends of Platforms 1 and 2 by about nine metres
- Installation of lighting including lamp posts and associated cabling and foundations on the platform extensions.
- Reconfiguration of the railway track between the station and the stabling yard because of the extended platforms by providing two crossovers and associated turnouts
- Associated modifications/additions to the overhead wiring structure (OHWS), a combined services route and under line crossing
- Signal relocation next to Platform 1.

Figure 3-1 shows the proposed platform extension works.

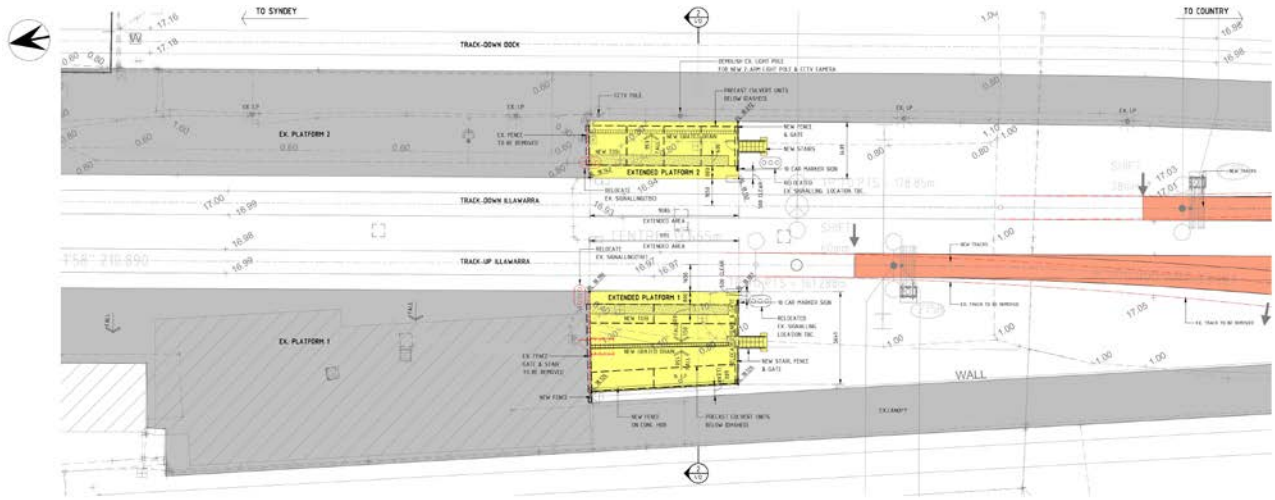


Figure 3-1: Wollongong Station platform extension plan
(Source: MTMS-LNE-CCG-AR-BD-DRG-010003 Rev 0)

Figure 3-2 shows a section of the proposed extension works.

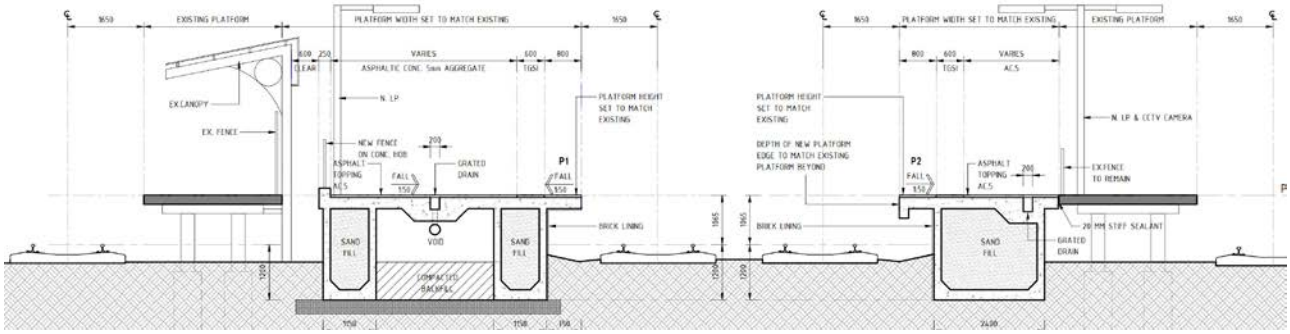


Figure 3-2: Wollongong Station platform extension section
(Source: MTMS-LNE-CCG-AR-BD-DRG-010003 Rev 0)

Wollongong Stabling Yard

The works specific to the existing stabling yard area include:

- Rebuild of the No. 2 Up Siding (currently unused) including new overhead wire structures (OWHSs) and upgrading the existing hand throw points to a mechanised system
- Reconditioning of the No.1 Up Siding
- Cleaning and tamping of ballast on all other sidings
- Relocation of two signals along the Up Refuge
- Relocation of overhead wiring masts and new overhead wiring over No.2 Up Siding
- Installation of eight walkways between tracks including stairway linkages, ranging in length from about 220 metres to about 500 metres and between about 1.2 metres and 2.8 metres in width and demarcation fencing
- Installation of bollard lighting at eight metre spacing
- Adjustments to fencing and a combined services route
- Installation of new fencing between the main line and yard line
- Drainage works along walkways including catch pits and underground drainage pipes
- Provide new and adapted cleaning sinks, occupational health and safety eyewashes and showers using existing water and drainage connections where possible, or otherwise providing new connections.

Figure 3-3 shows an overview of the proposed stabling yard works (refer engineers' drawings for more detail).

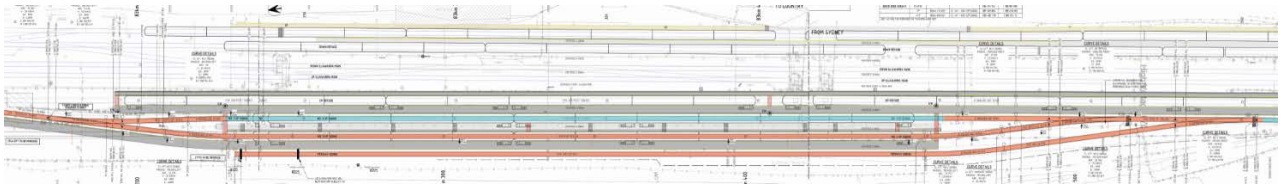


Figure 3-3: Wollongong Stabling Yard plan
(Source: MTMS-LNS-KBR-CV-TR-DRG-011131, 011132 and 011133, Rev B)

3.1.1 Wollongong Station photomontages

The benefit of photomontages in visualising changes in views brought about by a project were described in Section 2.2. One photomontage has been prepared from Platform 2 to assist with understanding the visual changes at Wollongong Station Precinct as a result of the Proposal. Figure 3-4 shows the existing view, while Figure 3-5 shows the same view with the proposed changes superimposed.

Figure 3-4: Wollongong Station – Existing view

Figure 3-5: Wollongong Station - Photomontage

This photomontage has been used to guide the assessment of views from in and around Wollongong Station.

The key changes that may bring about a visual change at Wollongong Station would be the nine metre platform extension on the southern ends of Platforms 1 and 2, OWHSs, and the installation of platform fencing, gates and access steps at the ends of the platform extension.

The proposed works within the stabling yard area will be entirely within the site and the visual context of the existing rail infrastructure. These works would be similar or the same to routine maintenance and works in this area.

4. Local context

Chapter 4 describes Wollongong Station and Wollongong Stabling Yard and their relationship with adjoining buildings, streets and surrounds, to assist with the identification of sensitive viewing locations.

4.1 Wollongong Station

Wollongong Station is on the South Coast Line, which runs between Central Station in Sydney and Port Kembla, Kiama and Bomaderry to the south.

Wollongong Station is located in Lowden Square and is roughly central to Wollongong (see Figure 4-1). Wollongong Station is about 83 kilometres from Central Station.

Roads near the station include Denison Street to the west of the station, Burrelli Street to the east and Crown Street which passes over the rail corridor to the north. Crown Street connects to the Princes Highway to the west.

The existing land use near Wollongong Station and Wollongong Stabling Yard includes low to medium density residential and public recreation areas to the west. To the east is a mix of residential, commercial and light industrial and, to the north-east, commercial uses.

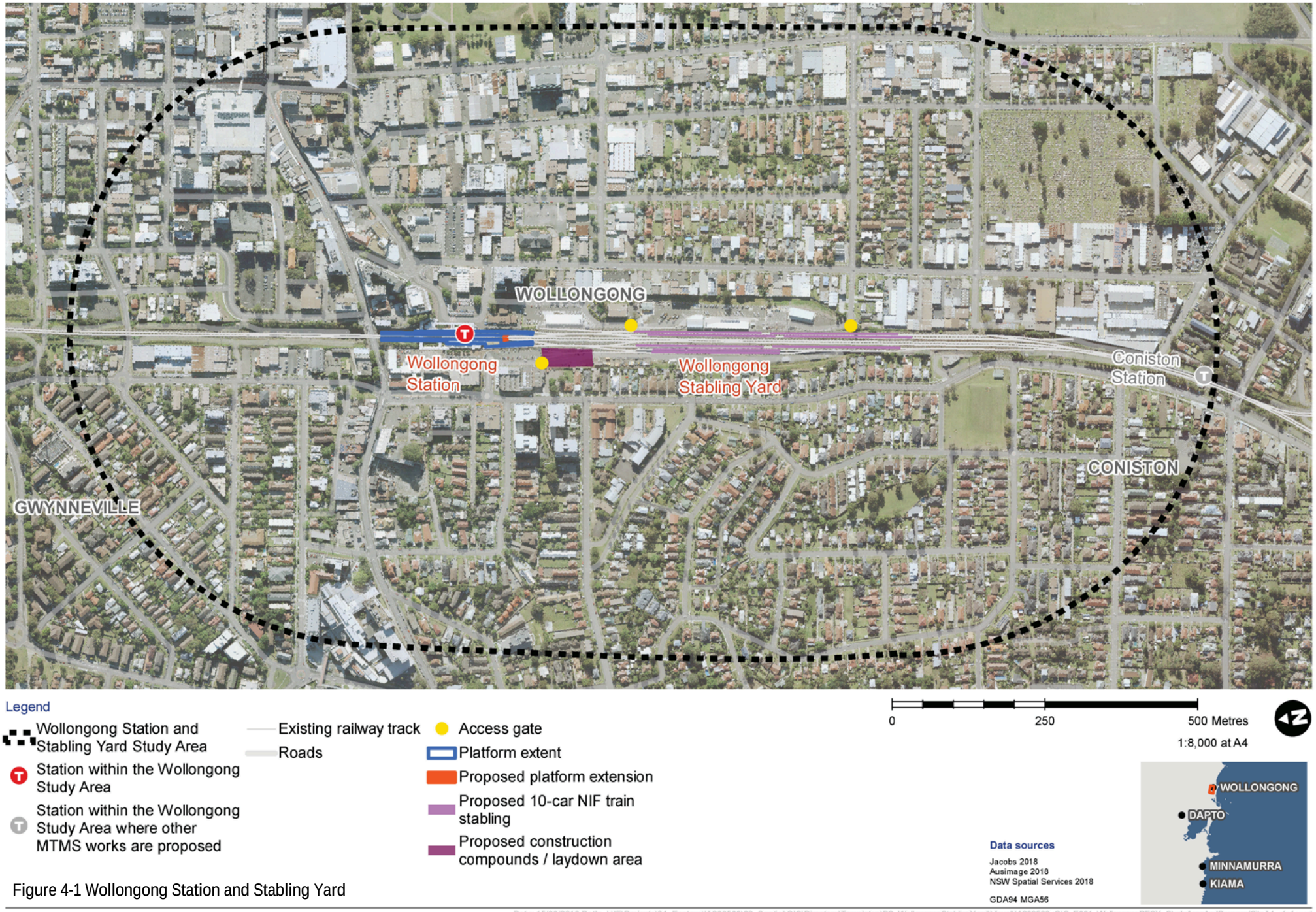


Figure 4-1 Wollongong Station and Stabling Yard

5. Planning framework

Chapter 5 discusses State and local government planning documents that provide guidance to the key landscape character and visual characteristics of the site.

5.1 Transport for NSW

The NSW Government is committed to the development of a customer-focused transport network to help it achieve its economic, social and environmental objectives. Good urban design can help achieve the NSW Government's aims for the rail systems of NSW. Relevant guidance on urban design principles for new rail infrastructure is provided in:

- *Around the Tracks: Urban Design for Heavy and Light Rail* (TfNSW 2016a)
- *Managing Heritage: Issues in Rail Projects Guidelines* (TfNSW 2016b)
- *Creativity Guidelines for Transport Systems* (TfNSW 2016c).

These guidelines have limited applicability to the Proposal due to the minor nature of the works and the lack of public visibility of Wollongong Stabling Yard.

5.2 Wollongong LEP

The Proposal is located within the Wollongong local government area. Whilst not directly applicable to the Proposal, some provisions in the Wollongong LEP and Wollongong Development Control Plan 2009 (Wollongong DCP) provide useful guidance for evaluating the landscape and visual impacts of the Proposal. The relevant clauses from these documents are summarised in the following sections.

The Wollongong LEP applies to land surrounding the station upgrade works. The relevant aims of this plan are 'to improve the quality of life and the social well-being and amenity of residents, business operators, workers and visitors' (clause 1.2.2d), 'to conserve and enhance heritage' (clause 1.2.2f) and 'to ensure that development is consistent with the constraints of the land and can be appropriately serviced by infrastructure' (clause 1.2.2g).

The Wollongong LEP identifies land use zones and local heritage items and contains height restrictions for new developments.

The Wollongong LEP has no clause setting out general urban design objectives or guidance on railway or station design.

5.2.1 Heritage

Wollongong Railway Station Group is listed on the NSW State Heritage Register and the RailCorp Section 170 Heritage and Conservation Register as an item of state heritage significance. It is also listed in the Wollongong LEP.

Clause 5.10 of the Wollongong LEP addresses heritage conservation. The objectives of the clause include:

a) *to conserve the environmental heritage of Wollongong,*

b) *to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,*

c) *to conserve archaeological sites,*

d) *to conserve Aboriginal objects and Aboriginal places of heritage significance.*

5.2.2 Wollongong DCP

Objectives of the Wollongong DCP that are potentially relevant to the Proposal include:

- *To ensure that development contributes to the quality of the natural and built environments*
- *To encourage development that contributes to the quality of the public domain.*
- *To ensure future development responds positively to the qualities of the site and the character of the surrounding locality*
- *To ensure development is of a high design standard and energy efficient*
- *To ensure new development is consistent with the desired future character for the area*
- *To protect areas of high scenic and aesthetic value*.

Although the Wollongong DCP contains no specific clauses or requirements relating to the design of public infrastructure such as railway buildings and structures, it places importance on the appearance and compatibility of development with the surrounding context. The relevant provisions of the Wollongong DCP are discussed below.

Wollongong City Centre

The Proposal is located in the Wollongong City Centre. Chapter D13 of the Wollongong DCP outlines the requirements for development in the Wollongong City Centre. The key objectives for views and view corridors for pedestrian amenity in the Wollongong City Centre Precinct include (section 3.10 of chapter 13):

- *To maintain and enhance views from the city centre to the foreshore, escarpment and significant objects (such as the lighthouse) wherever possible*
- *To enhance views along city streets*
- *To protect silhouettes of the tops of major buildings or structures as seen against the sky or backdrop of the escarpment or foreshore.*

Heritage conservation

Chapter E11 of the Wollongong DCP addresses heritage conservation and includes the following relevant objectives:

- *To consider the potential heritage significance of all properties identified on the Wollongong LEP 2009 Heritage Map and other applications as a matter to be taken into account in the assessment of Development Applications affecting those properties*
- *To ensure that any development with respect to a heritage site is undertaken in a manner that is sympathetic to, and does not detract from the identified significance of the site*
- *To encourage innovative approaches to the conservation of Wollongong's heritage and to provide incentives for good management practice*
- *To promote Wollongong's cultural heritage as a valuable resource that must be conserved for future generations*
- *To encourage and guide recording and interpretation of significant heritage throughout the development process.*

Clause 14.2 of Chapter E11 of the Wollongong DCP contains controls for development near heritage sites:

Where development is proposed adjacent to or within the vicinity of a heritage site or heritage conservation area, the following matters must be taken into consideration:

- *The character, siting, bulk, scale, height and external appearance of the development*
- *The visual relationship between the proposed development and the heritage item or heritage conservation area*

- *The potential for overshadowing of the adjoining heritage item or any building within a heritage conservation area*
- *The colours and textures of materials proposed to be used in the development*
- *The landscaping and fencing of the proposed development*
- *The location of car parking spaces and access ways into the development*
- *The impact of any proposed advertising signs or structures*
- *The maintenance of the existing streetscape, where the particular streetscape has significance to the heritage site*

  (i) The impact the proposed use would have on the amenity of the heritage site

  (j) The effect the construction phase will have on the wellbeing of a heritage building.
- *Development in the vicinity of a heritage item should give strong regard to any significant views to and from the heritage item or heritage conservation area and any public domain area*.

6. Assessment of views and visual impact

Chapter 6 describes the change in views from key publicly accessible locations within the Wollongong Station precinct and other publicly accessible locations in the area surrounding the Proposal. The change in views from privately accessible locations near Wollongong Stabling Yard are also described.

6.1 Views from publicly accessible locations

Six viewpoints (Viewpoints 1 to 6) have been selected from publicly accessible locations as representative of the visual impact on viewers in and around Wollongong Station (refer to Figure 6-1). Each of these viewpoints are discussed in detail below.

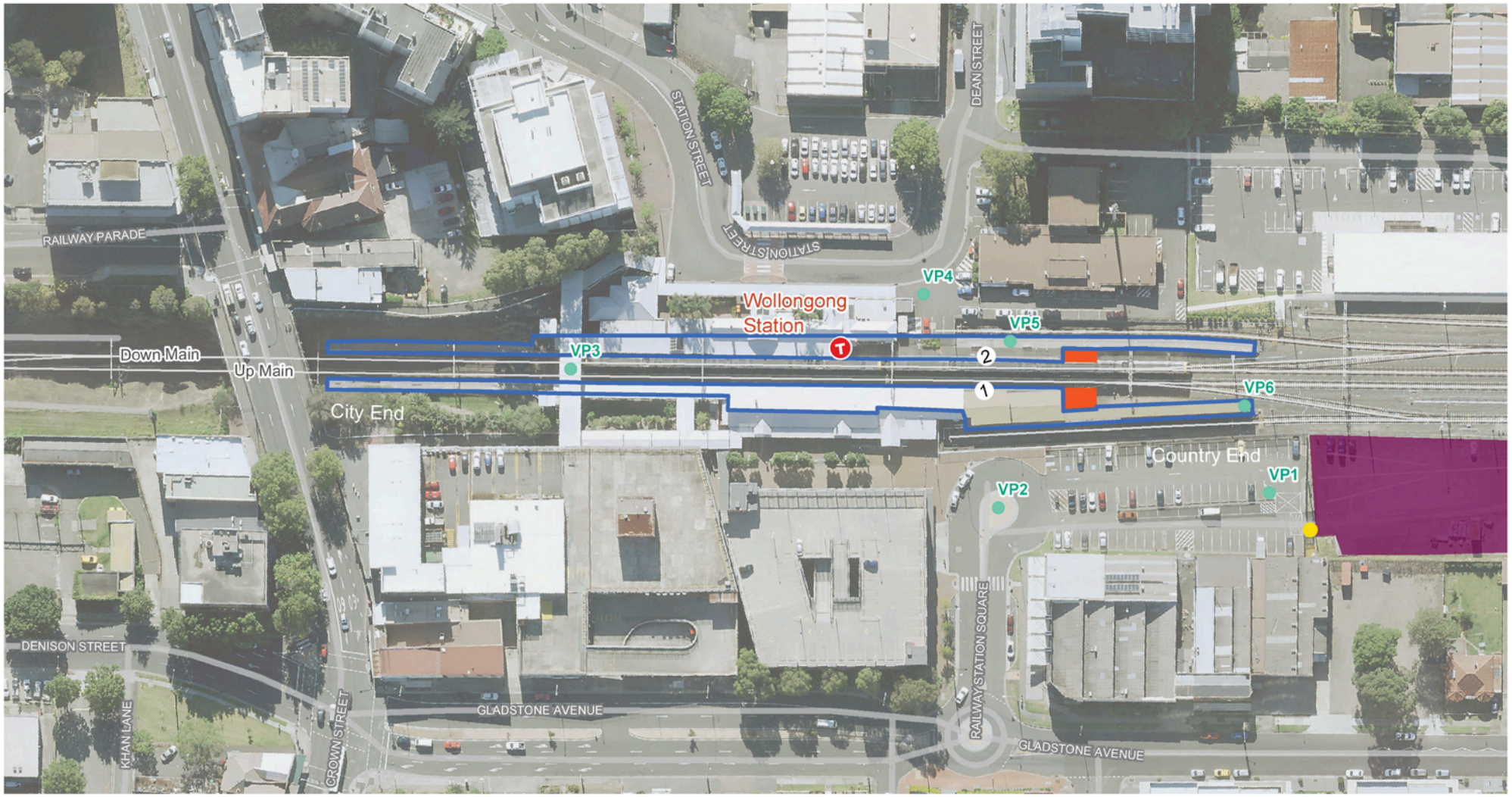


Figure 6-1 Wollongong Station viewpoint locations

6.1.1 Viewpoint 1: Wollongong Station Carpark West

Viewpoint 1 is located in the southern section of Wollongong Station precinct. There is a car park on the western side of the station.

This viewing location is about 55 metres south-west of the proposed extension of Platform 1 and about 150 metres north of Wollongong Stabling Yard.

Figure 6.2 shows the view looking east from Viewpoint 1 towards the proposed works.

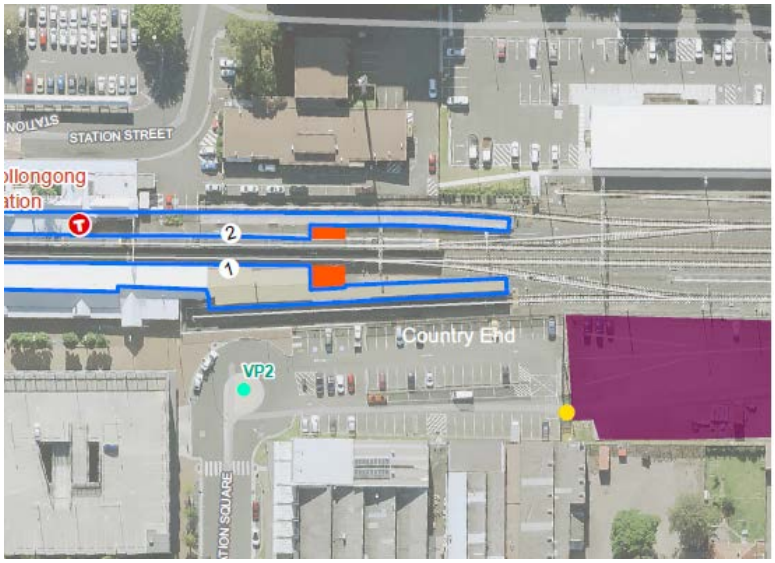
Figure 6.2: Viewpoint 1 – View looking east (GPS 56H 305894, 6188351)

The proposed platform extension would sit behind the canopy on the No.1 Siding. Wollongong Stabling Yard is to the right of the view in Figure 6.2. This proposed stabling yard upgrade works would not be visually discernable from Viewpoint 1 due to the distance, the fence at the southern end of the carpark and other rail infrastructure in the view.

From locations near Viewpoint 1 where Wollongong Stabling Yard is visible, the proposed stabling yard upgrade works would appear visually consistent with other railway infrastructure in the view.

For these reasons, the visual impact at Viewpoint 1 is assessed as Negligible-Nil.

6.1.2 Viewpoint 2: Railway Station Square roundabout



Viewpoint 2 is located at the roundabout at the end of Railway Station Square, close to the entrance of the car park.

This viewing location is about 30 metres north-west of the proposed extension of Platform 1 and about 230 metres north-west of the stabling yard.

Figure 6.3 shows the view looking east from Viewpoint 2 towards the proposed works.

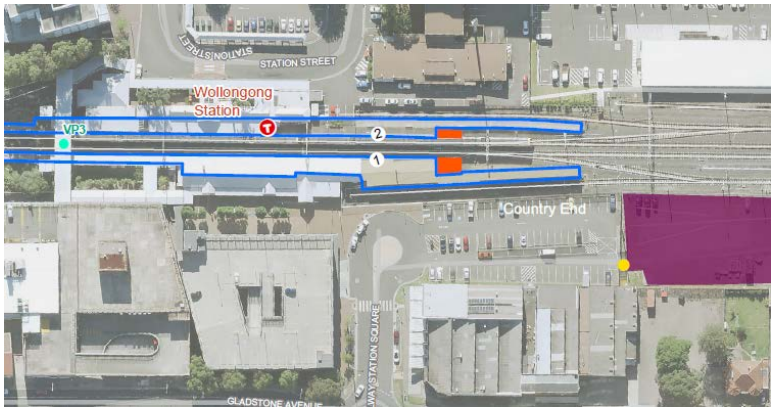
Figure 6.3: Viewpoint 2 – View looking east (GPS 56H 305901, 6188425)

The proposed platform extension would sit central to the view in Figure 6.3. The proposed platform extension will not be visible from Viewpoint 2 due to the angle of view and existing platform infrastructure.

Wollongong Stabling Yard is to the right of Figure 6.3. The proposed upgrade to the stabling yard would not be visually discernable from Viewpoint 2 due to the distance, the fence at the southern end of the car park and other rail infrastructure in the view.

For these reasons, the visual impact from Viewpoint 2 is assessed as Negligible-Nil.

6.1.3 Viewpoint 3: Pedestrian walkway overpass



Viewpoint 3 is located central to the pedestrian walkway overpass between Platforms 1 and 2.

This viewing location is about 130 metres north of the proposed platform extensions, and about 300 metres north of Wollongong Stabling Yard.

Figure 6.4 shows the view looking south from Viewpoint 3 towards the proposed works.

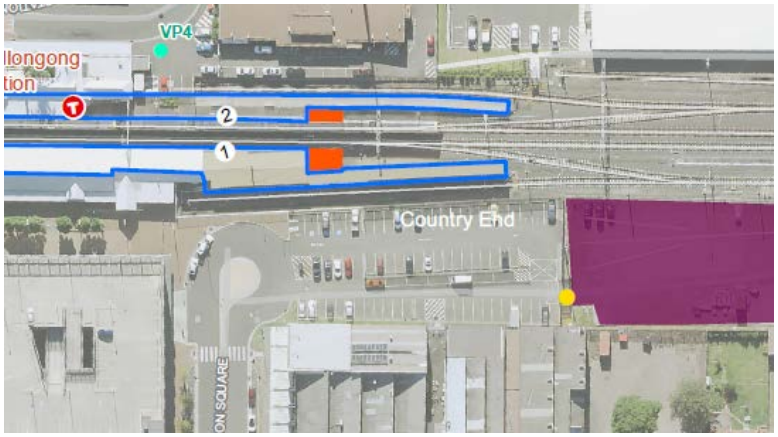
Figure 6.4: Viewpoint 3 – View looking south (GPS 56H 305955, 6188532)

The proposed platform extensions would be visible central to the view seen in Figure 6.4. From this location, the proposed platform extensions would extend the existing platform surface, highlighted platform edge and line marking about nine metres to the south. The white safety fencing would be relocated to the southern extent of the extended platform.

Wollongong Stabling Yard is the background of Figure 6.4. It is unlikely that the proposed upgrade to the stabling yard would be a noticeable element, due to the elevated nature of the view, which looks across several overhead wiring structures, which mesh together. If visible, the proposed stabling yard upgrade would appear consistent with other infrastructure in the view.

For these reasons, the visual impact from Viewpoint 3 is assessed as Negligible.

6.1.4 Viewpoint 4: Wollongong Station Carpark East



Viewpoint 4 is located at the edge of the station building on Platform 2.

This viewing location is about 35 metres north-east of the proposed platform extension of Platform 2 and about 200 metres north of the stabling yard.

Figure 6.5 shows the view looking south-west from Viewpoint 4 towards the proposed works.

Figure 6.5: Viewpoint 4 – View looking west (GPS 56H 305961, 6188433)

The proposed platform extensions would sit central to the view in Figure 6.5, whilst the stabling yard sits in the background to the left of the image.

Parked cars, vertical panels within the fence and other structures on the platform would filter views to the proposed platform extensions. When vehicles are not parked, the proposed changes may be visible albeit consistent with the existing views and visual content.

Figure 6.5 also shows examples of white and black fencing. The white fencing, albeit lower in height is more noticeable than the black coloured panels which appear more visually recessive. The black fencing should be considered as a mitigation measure where fencing is proposed next to visually sensitive areas.

For these reasons, the visual impact from Viewpoint 4 is assessed as Negligible.

6.1.5 Viewpoint 5: Wollongong Station Platform 2

Viewpoint 5 is located on the southern end of Platform 2.

This viewing location is about 15 metres north of the proposed Platform 2 extension and about 180 metres north of the stabling yard.

Figure 6.6 below shows the view looking south-west towards the proposed works.

Figure 6.6: Viewpoint 5 – View looking south-west (GPS 56H 305943, 6188416)

Figure 6.7 shows a photomontage of the Proposal.

Figure 6.7: Viewpoint 5 – Photomontage

The proposed platform extensions are visible to the left of Figure 6.7. The proposed extensions would appear consistent with the existing platform. The existing signals and white fencing would be relocated about nine metres to the south to the end of the platform extensions. The platform extensions would be brick masonry veneer to concrete culverts to match with the existing colour and texture. This section would appear to float when viewed against the red brick infill below the existing platform surface. The platform extension is set back to allow for safety refuge underneath it.

The proposed stabling yard upgrade would be located in the background to the left of Figure 6.7. The photomontage shows it is not a noticeable element, due to the existing view including several overhead wiring structures, station infrastructure and vertical elements which mesh together. If visible it would appear consistent with other infrastructure in the view.

For these reasons, the visual impact from Viewpoint 5 is assessed as Low-Negligible.

6.1.6 Viewpoint 6: Wollongong Station Platform 1 South

Viewpoint 6 is located at the southern end of Siding No.1.

This viewing location is about 40 metres south of the proposed platform extensions and about 120 metres north of the stabling yard.

Figure 6-8 shows the view looking south from Viewpoint 6 towards the stabling yard.

Figure 6-8: Wollongong Station Viewpoint 6 – View looking south (GPS 56H 305918, 6188354)

Viewpoint 6 is one of the few publicly accessible locations where the proposed stabling yard upgrade may be visible, Viewpoint 6 is beyond the extent of the proposed extensions to Platforms 1 and 2.

At a distance of about 120 metres, in a view with many vertical elements, the proposed stabling yard upgrade would not be a dominant feature in the view. Where visible, it would appear consistent with existing rail infrastructure such as overhead wiring structures.

For these reasons, the visual impact from Viewpoint 6 is assessed as Negligible.

6.2 Views from privately accessible locations

6.2.1 Residential dwellings on Gladstone Avenue

Figure 6-9 shows the proposed works within Wollongong Stabling Yard. There are several residential dwellings to the west of the stabling yard. A row of dwellings on the eastern side of Gladstone Avenue to the south-west of the stabling yard are listed as heritage items in Wollongong LEP.

Figure 6-10 shows examples of the residential interface along the property boundary shared between the stabling yard and the rear of dwellings along the eastern side of Gladstone Avenue.

No vegetation removal would be required for the Proposal and there will be limited earthworks required to establish the additional rail siding capacity.

Similar to views of Wollongong Station from publicly accessible locations, the change in views of Wollongong Stabling Yard from privately accessible locations will be entirely consistent with those that currently exist, such that the works would appear as routine maintenance upon existing facilities. The only noticeable change may be in night-time views, where new lighting may cause spill or glare.

Any changes to night-time views could be managed through an appropriate lighting management plan that includes downward direct lights, baffling and shielding. Although lighting would be a change in night-time views, there would already be some light spill and glare from not only the railyards but also streetlights within the surrounding area and Wollongong township itself.

Figure 6-9 Proposed works within Wollongong Stabling Yard

Figure 6-10: Boundary between Wollongong Stabling Yard and the rear of dwellings on Gladstone Avenue

7. Mitigation measures

Chapter 7 sets out mitigation measure that may assist with managing the predicted visual impact assessment of the Proposal. Mitigation measures assist with managing or reducing visual impacts of a project during construction and in the transition to operation and maintenance of a project.

7.1 Construction

Construction impacts are typically short in duration. Amenity impacts are managed by various documents and procedures which include construction management plans and environmental management plans.

Worksite compounds should be screened with shade cloth (or similar material, where necessary) to minimise visual impacts from key viewing locations.

Temporary hoardings, barriers, traffic management and signage should be removed when no longer required.

7.2 Lighting

All permanent lighting should be designed and installed in accordance with the requirements of AS 1158 Road Lighting and AS 4282 Controlling the Obtrusive Effects of Outdoor Lighting. An appropriate lighting management plan should be prepared to minimise the impact of lighting within the stabling yard to include downward direct lights, baffling and shielding.

7.3 Materials

Materials should be selected to be consistent with existing elements at Wollongong Station and Wollongong Stabling Yard.

7.4 Fencing

The black fencing should be considered as a mitigation measure where fencing is proposed adjacent to visually sensitive areas (refer to Section 6.1.5 and Figure 6.5).

8. Conclusion

The proposed works that are relevant to landscape and visual impacts include the extensions to the southern ends of Platforms 1 and 2 by about nine meters and the track works including modifications, removal of existing track and construction of new track in Wollongong Stabling Yard.

Platform extensions

Change in views that will result from the platform extensions would not be discernible or noticeable from publicly accessible locations external to the site due in part to the limited locations where the proposed works would be visible and screening of these views by existing rail infrastructure, perimeter fencing and vegetation.

In publicly accessible locations internal to the site, such as platforms and the walkway, the proposed extensions would appear consistent with the existing platforms.

Stabling yard upgrade works

There are few publicly accessible locations where the proposed stabling yard upgrade works would be visible.

One publicly accessible location where the proposed stabling yard upgrade works could be viewed is the southern ends of the platforms, however, as shown in Figure 6.7, the works are at such a distance that existing rail infrastructure will filter or screen the view. The works are also entirely visually consistent with the existing context of views.

Residential views

No vegetation removal is proposed and there would be limited earthworks required as part of the proposed stabling yard upgrade works. Like the expected change in views from publicly accessible locations, the change in views from private property would be entirely consistent with those that currently exist, such that the works would appear as routine maintenance upon existing facilities. The only noticeable change may be in night-time views, where new lighting may cause spill or glare. This can be managed through an appropriate lighting management plan to include downward direct lights, baffling and shielding. Although lighting would be a change in night-time views, there would already be some light spill and glare from not only the railyards but also streetlights within the surrounding area and Wollongong township itself.

Appendix A. Photomontage

WOLLONGONG STATION VIEW 1

View looking south to west

(GPS 56 H, 305943m E, 6188416 m S)

Existing view

Photomontage

SeeSheet2

Viewpoint Map

JACOBS

More Trains More Services - Wollongong Station View 1
COORDINATES: 56 H, 305943m E, 6188416m S
PREPARED BY: AE/HB
SHEET:1/3 DATE: 01/08/2019

WOLLONGONG STATION VIEW 1

(GPS 56 H, 305943m E, 6188416 m S)

60° view looking south west

Existing view

Photomontage

JACOBS

More Trains More Services - Wollongong Station View 1
COORDINATES: 56 H, 305943m E, 6188416m S
PREPARED BY: AE/HB
SHEET:2/3 DATE: 01/08/2019