



## **Banksia Station TAP Upgrade**

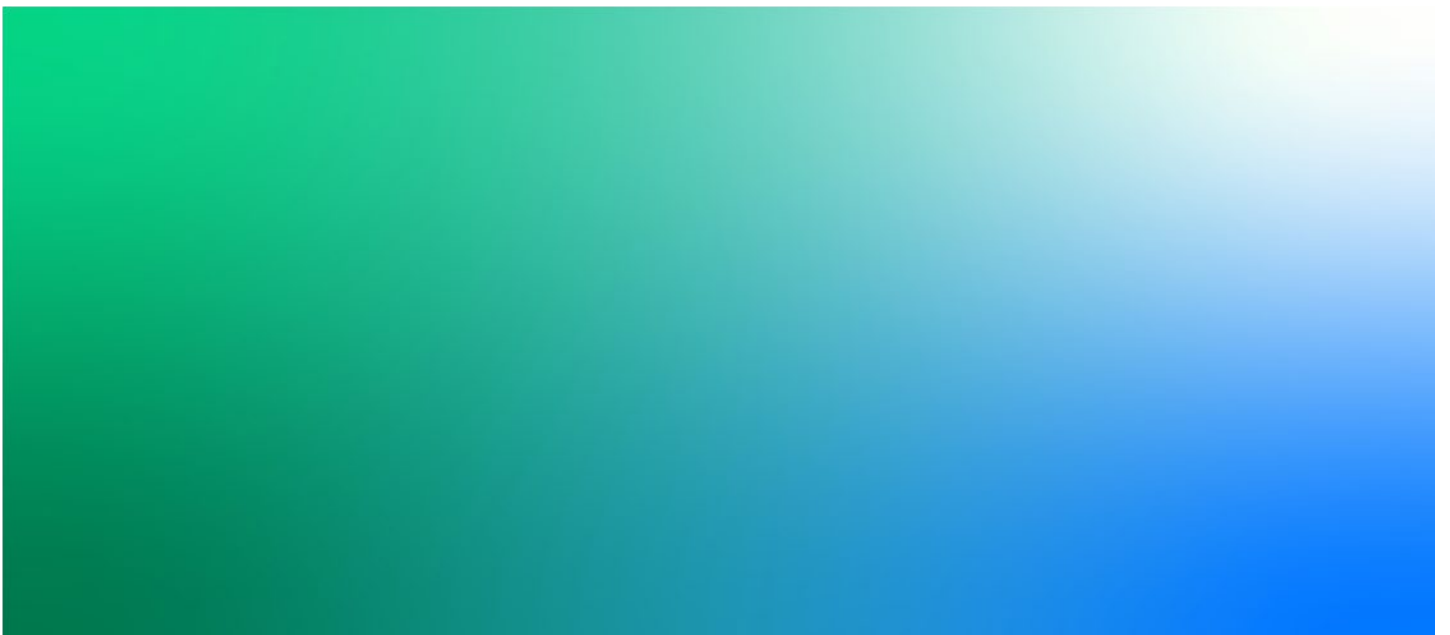
**Visual Impact Assessment**

IA230700 | Final

August

**Transport for NSW**

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## Banksia Station TAP Upgrade

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**Appendix A. Photomontages**

## 1. Introduction

Jacobs Group (Australia) Pty Ltd (Jacobs) has been engaged by Transport for NSW (TfNSW) to undertake an assessment of the visual impacts of the proposed upgrade of access facilities and platform canopies at Banksia Station as part of the Transport Access Program (TAP).

The Proposal forms part of the Transport Access Program and More Trains, More Services Program. The proposed upgrade works include the installation of three new lifts and landings to provide access between Railway Street, Hattersley Street, the existing underpass and the platforms and construction of new platform canopies on Platform 1, Platforms 2 and 3 and Platform 4. As well as upgrades to the street interfaces including parking, kiss-and-ride and footpath upgrade work. These works would require the removal of one and trimming of several other trees in Hattersley Street. The relocation of some impacted infrastructure such as adjustments to high voltage powerlines, light poles, PA and CCTV poles may also be noticeable.

This visual impact assessment has reviewed the change in views from the public realm that might be brought about by the Proposal and assessed the magnitude of those changes in the context of these views to inform the Review of Environmental Factors (REF) for the Proposal.

This report is not a review of the impacts or interpretation of Heritage Values. These are assessed in the Statement of Heritage Impact (SoHI).

The following chapter 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 Proposal and visual impact; and
- assess the visual impact of the Proposal from publicly accessible locations.

The following section briefly describes the rationale and scale of effects to assess the visual impact of the proposed development.

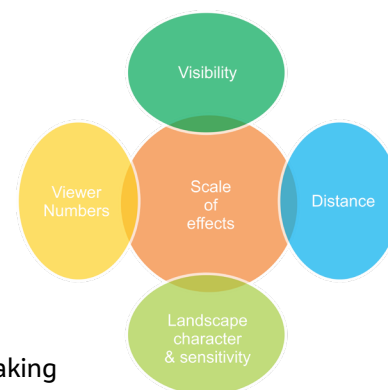
### 2.1 Assessment of visual impacts from publicly accessible locations

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 assessment is also based on photomontages that are used at several viewpoints to assist in interpreting the proposed changes brought about by the project.

The overall visual impact is determined 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; and
- 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.

#### 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 the three criteria of distance, viewer numbers and landscape sensitivity are 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 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 is close to the viewpoint and the landscape sensitivity is 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 is low (i.e. within a highly man modified landscape) then even if the development is in close proximity to the viewpoint and it was visible to a large number of viewers, the overall visual impact would be low. This is 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 of distance, viewer numbers and landscape sensitivity are considered as higher than “low” or the visual effects are able to be mitigated / remedied from an initial rating of “high”. This will 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 of distance, viewer numbers and landscape sensitivity 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.

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 changes brought about by the project 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 an 80-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 an 80-degree horizontal field of view. The 80-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.

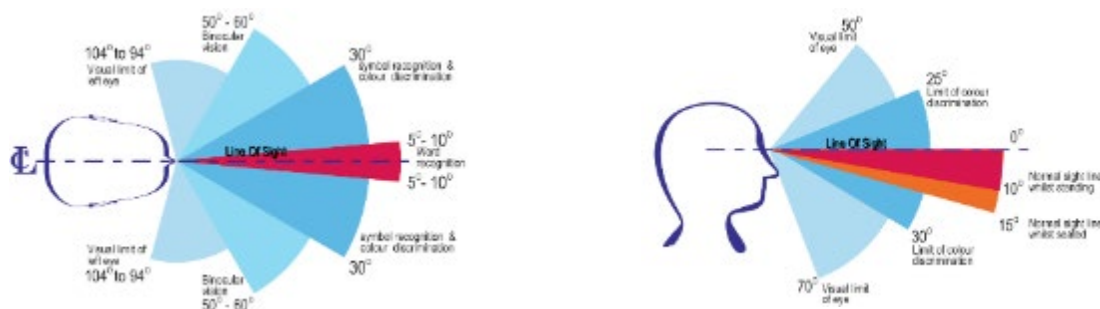


Figure 2.1: Horizontal and vertical field of view

(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 Wiley & Sons, 2012.

The 80-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 an 80-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  $\frac{1}{3}$  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.

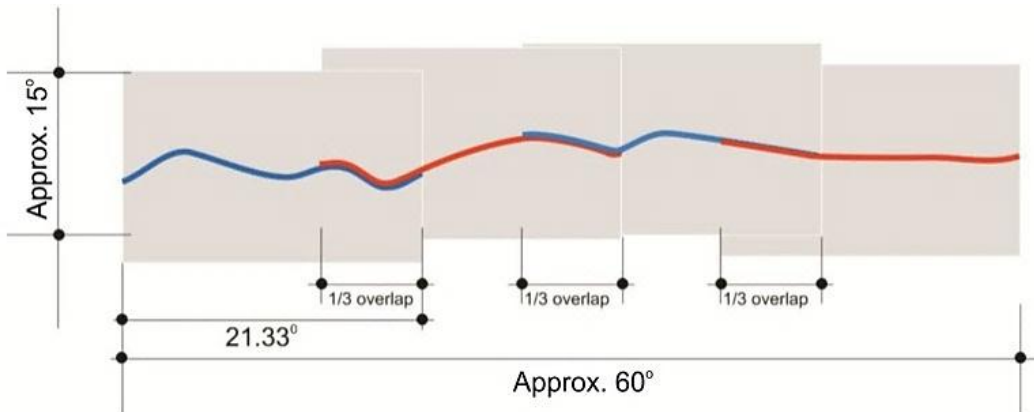


Figure 2.2: Photomontage layout

### 2.2.4 GPS co-ordinates

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

Four (4) photomontages have been prepared from public viewpoints around Banksia Station. These viewpoints are indicative of the views from in and around the station. These photomontages are appended to this report (refer to Appendix A for A3 size photomontages with an 80-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 images, which are 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 are to be printed on A0 sized sheets and viewed 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 the Proposal. The description and photomontages within this report are based on the architectural model BKS-AR-M3D-00100\_200626\_Flat Roof prepared by Downer and provided by TfNSW. Further changes and alterations may arise through detailed design.

#### 3.1 Scope of works

The Proposal forms part of the Transport Access Program and More Trains, More Services Program. The key features of the Proposal are summarised as follows:

- construction of three new lifts and landings to provide access between Railway Street, Hattersley Street, the existing underpass and the platforms;
- upgrade of the existing stairs between Platform 1 (Railway Street) and Platform 4 (Hattersley Street) and the underpass to include new compliant handrails, tactile ground surface indicators (TGSIs) and nosing;
- construction of new platform canopies on Platform 1, Platforms 2 and 3 and Platform 4;
- interior changes to the existing station building on Platforms 2 and 3 including a new unisex ambulant toilet and a new family accessible toilet;
- parking, kiss-and-ride and footpath upgrade work to include:
  - a new kerb ramp at the Railway Street pedestrian crossing;
  - widening of the footpath to 2.5 metres between the lift and bus stop on the eastern side of Railway Street;
  - one new accessible car parking space and one kiss-and-ride space along Hattersley Street; and
  - a new kerb ramp at the Hattersley Street entrance;
- upgrade of the existing surfaces (re-grading/re-surfacing) of all four platforms to provide compliant accessible paths to station amenities and between the new lifts and boarding assistance zones;
- electrical upgrades including a new transformer (to be installed on land next to Fortescue Reserve)
- drainage upgrades including the installation of new pumps in the underpass and new stormwater pipes to transfer rainfall runoff from the canopies on Platforms 2 and 3 and in the underpass to existing stormwater pipes on Hattersley Street; and
- ancillary works including adjustments to high voltage powerlines, lighting, electronic ticketing, relocation or replacement of existing customer facilities, improvements to station communications, hearing loops, wayfinding signage and new tactile ground surface indicators (TGSIs).

Subject to planning approval, construction is expected to start in mid-2020 and finish in early 2022.

Figure 3.1 shows the proposed overall site plan for works at Banksia Station. The areas shaded in yellow show the locations of the proposed works.

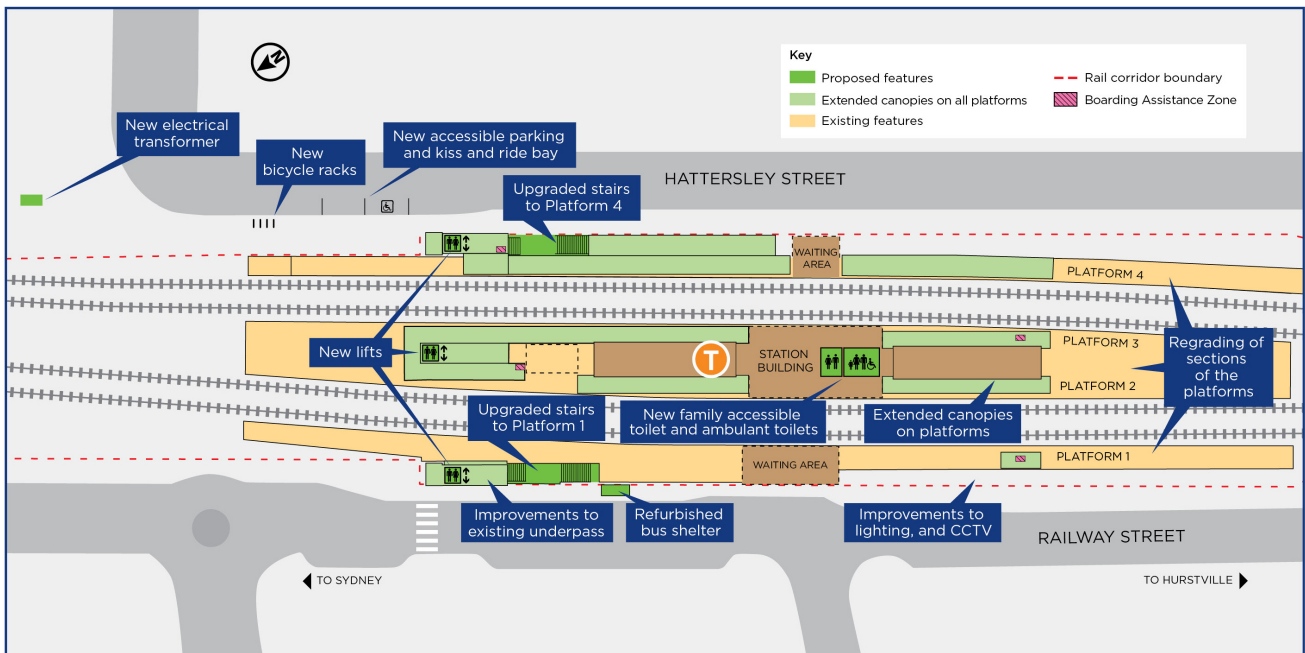


Figure 3.1: Banksia Station Site Plan (Source: TfNSW)

The key visual components of the Proposal are outlined in Figure 3.1. The blue dashed outline is the location of the lift installations, the orange dashed line outlines the proposed amendments or additions of stairs and the magenta dashed line outlines the extent of the proposed canopies.

Figure 3.2 below shows an example of what the lift structures would look like, while Figure 3.3 shows an example of what the canopy structures would look like.



Figure 3.2: Lift structure



Figure 3.3: Canopy structure

### 3.1.1.1 Materials and finishes

Materials and finishes for the Proposal have been selected based on the criteria of durability, low maintenance and cost effectiveness, to accord with heritage requirements and to minimise visual impacts:

- New retaining walls to platform – Dry pressed brick with brick and grout colour to match existing
- Railway corridor fencing – ARC loop top fence (to match existing)
- Canopy steel column – Painted finish to match existing
- Canopy metal sheet roofing – Shale grey
- Lift cladding – Glazed bricks fixed over concrete base.

### 3.1.2 Temporary site facilities

Temporary site facilities would be required to facilitate construction of the proposed alterations and would include a site office, amenities, laydown and storage areas for materials, a piling rig and crane set up and material delivery areas.

A construction site compound is proposed at the southern end of Hattersley Street in the existing 90-degree parking area alongside the rail corridor. Four potential areas for laydown and storage of materials have been identified:

- Taylor Avenue alongside Fortescue Reserve between Hattersley Street and the Princes Highway;
- The grassed area between the rail corridor and Fortescue Reserve;
- The strip of land between the railway tracks and the footpath near the intersection of Railway Street, Knight Street and Roach Street; and
- Platforms 2 and 3 (northern end).

Two potential areas for piling rig and crane set up and material delivery have been identified:

- Railway Street between the pedestrian crossing and bus shelter. The bus zone at this location would need to be temporarily relocated; and
- Hattersley Street alongside the station entrance that is signposted as a no stopping zone.

These potential site office, amenities, laydown and storage areas and piling rig and crane set up and material delivery areas are shown in Figure 3.4 below.



Figure 3.4: Proposed Construction Compound and Laydown Areas

This report will assess the temporary visual impacts of these facilities from each of the viewpoints in Section 6. Impacts associated with using these areas have been considered within the environmental impact assessment including requirements for rehabilitation.

### **3.2 Banksia Station photomontages**

Four photomontages have been prepared to assist with understanding the visual changes at Banksia Station as a result of the Proposal.

These photomontages have been used to guide the assessment of views from in and around Banksia Station.

The key changes that may bring about a visual change at Banksia Station would be:

- the installation of three new lifts and landings to provide access between Railway Street, Hattersley Street, the existing underpass and the platforms;
- construction of new platform canopies on Platform 1, Platforms 2 and 3 and Platform 4;
- upgrades to the street interfaces including parking, kiss-and-ride and footpath upgrade work;
- removal of a substantial street tree along Hattersley Street. This tree and its canopy are visible from many locations within and around Banksia Station; and
- relocated infrastructure such as adjustments to high voltage powerlines, light poles, PA and CCTV poles.

These changes in views have been assessed in Section 6. A full set of photomontages is included in Appendix A.

## 4. Existing environment

Chapter 4 describes Banksia Station and its relationship with adjoining buildings, streets and surrounds to assist with the identification of sensitive viewing locations.

### 4.1 Regional context

Banksia Station is located on the T4 Illawarra Line in Sydney's south, approximately 10 kilometres by rail from Central Station. The suburb of Banksia consists of predominantly low-density housing and some medium density residential flat buildings. Figure 4.1 shows the location of Banksia Station along the T4 Illawarra Line.



Figure 4.1: Regional context

## 4.2 Local context

Figure 4.2 shows the study area on which this visual impact assessment of the Proposal is based.



Figure 4.2: Banksia Station study area



### 4.2.1 Zoning

Banksia Station is located within the Bayside Local Government Area (LGA) (formerly Rockdale LGA). The *Rockdale Local Environmental Plan 2011* (Rockdale LEP 2011) applies to the Banksia area and identifies the land use zones within the study area. Figure 4.3 shows the zoning of the station and surrounds.

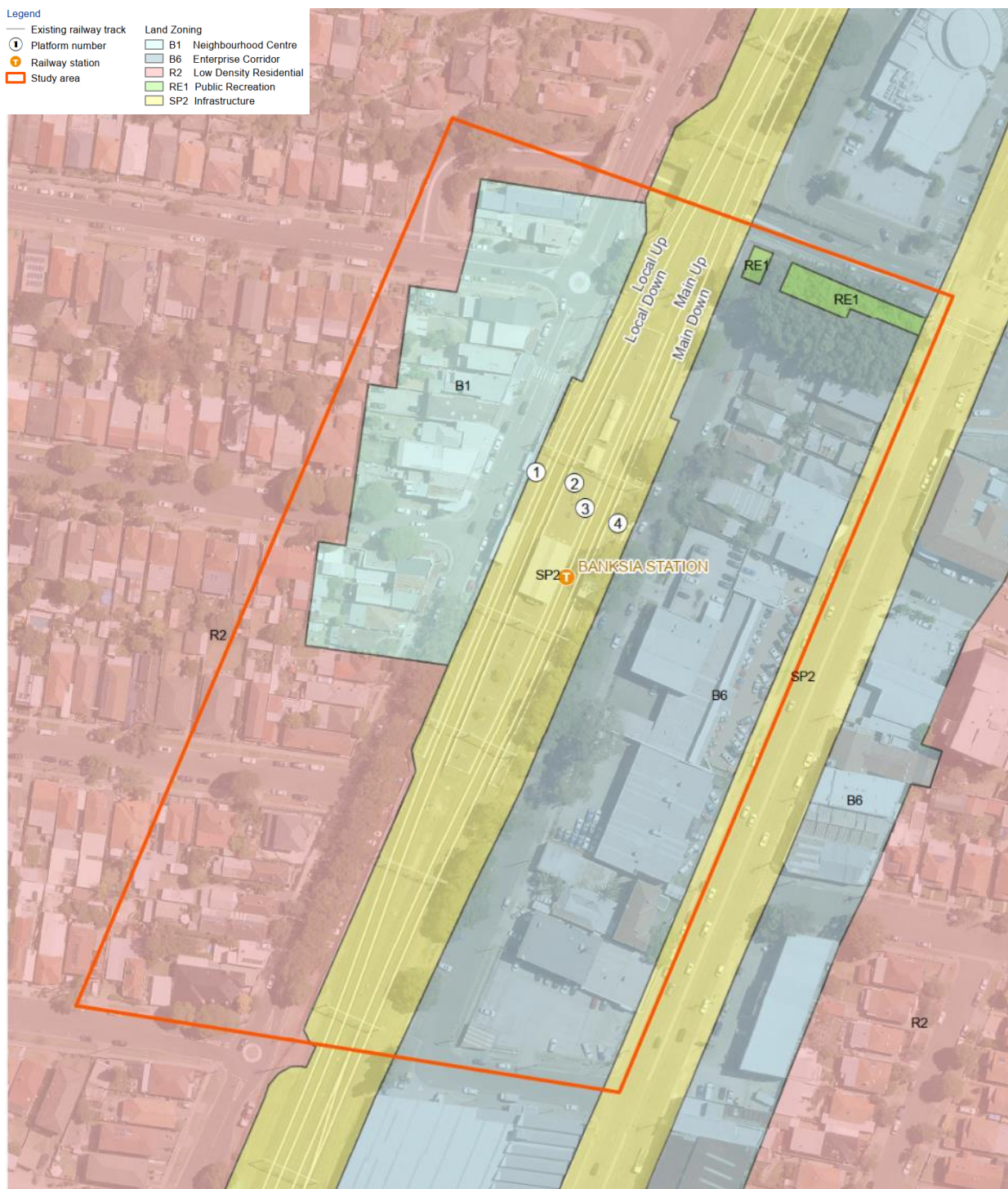


Figure 4.3: Banksia Station and surrounds zoning map

The rail corridor is zoned SP2 Infrastructure, Banksia local centre is zoned B1 Neighbourhood Centre, land alongside the Princes Highway is zoned B6 Enterprise Corridor and Fortescue Reserve is zoned RE1 Public Recreation.

### 4.2.2 Land use

Banksia Station is bounded by Railway Street to the west and Hattersley Street to the east. Banksia local centre is located on the western side of the station and comprises a strip of shops along the western side of Railway Street. There is a mix of detached dwellings and commercial properties associated with the Princes Highway corridor along the eastern side of Hattersley Street at the station.

The Proposal is mostly located within the station itself, and a small section of kerb, footpath and road on Railway Street, Hattersley Street and Taylor Avenue.

Figure 4.4 shows the existing commercial interface along Railway Street to the west of Banksia Station looking north towards the station.



Figure 4.4: Commercial interface Railway Street – view looking north

Figure 4.5 shows the existing commercial interface along Railway Street to the west of Banksia Station looking south east towards the station.



Figure 4.5: Commercial interface Railway Street – view looking south-east

Development of the land to the east of the station comprises mostly commercial development associated with the Princes Highway corridor, a small number of detached dwellings opposite the station entrance on Hattersley Street and Fortescue Reserve to the north-east of the station. Fortescue Reserve is characterised by large Morton Bay Fig (*Ficus macrophylla*) trees along the southern (Taylor Avenue) boundary of the park with a footpath that cross the park diagonally from the station to the intersection of the Princes Highway and Subway Road.

Figure 4.6 shows the sensitive residential interfaces on Bowmer Street to the west of Banksia Station.



Figure 4.6: Residential interface Bowmer Street – view looking east towards Banksia Station

Figure 4.7 shows the sensitive residential interfaces on Hattersley Street to the east of Banksia Station.



Figure 4.7: Residential interface Hattersley Street – view looking south-west

Figure 4.6 and Figure 4.7 also show the mature plantings within the frontages of private allotments and within the road reserves.

## 5. Planning framework

Chapter 5 discusses planning documents that provide guidance on key landscape character and visual characteristics of Banksia Station and future land use.

This is not intended to be a thorough review of the planning scheme, mechanisms and triggers as this is best undertaken by others. Rather this review seeks to identify areas or locations that may be of a particular landscape or visual significance in the area and recognised or protected accordingly.

The Proposal is subject to the provisions of Division 5.1 of the Environmental Planning and Assessment Act 1979 and the State Environmental Planning Policy (Infrastructure) 2007. The Proposal is permissible without development consent and does not formally require consideration of local planning instruments. However, the design should have some regard for the local planning instruments to establish a high-level aesthetic synergy with the local area where possible.

### 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 provide some relevant guidance for the Proposal.

### 5.2 Rockdale Local Environment Plan 2011

Banksia Station is located within the Bayside LGA. Rockdale LEP is the relevant local environmental plan for Bayside LGA. Whilst not directly applicable to the Proposal, some provisions in the Rockdale LEP and Rockdale Development Control Plan 2011 (Rockdale DCP) provide useful guidance for evaluating the landscape and visual impacts of the Proposal.

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

The Rockdale LEP identifies the subject site as being zone SP2 – Infrastructure. The objectives of this zone are:

- *To provide for infrastructure and related uses.*
- *To prevent development that is not compatible with or that may detract from the provision of infrastructure.*

The Proposal is consistent with these objectives.

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

### 5.2.1 Non-Aboriginal heritage

Banksia Railway Station Group is listed on the RailCorp Section 170 Heritage and Conservation Register as an item of local heritage significance.

Clause 5.10 of the Rockdale LEP addresses heritage conservation. The objectives of this clause are:

- *To conserve the environmental heritage of Rockdale;*
- *To conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views;*
- *To conserve archaeological sites; and*
- *To conserve Aboriginal objects and Aboriginal places of heritage significance.*

Banksia Station is not listed as a local heritage item in Schedule 1 of the Rockdale LEP.

## 5.3 Rockdale DCP

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

- *Promote high quality urban design outcomes within the context of environmental, social and economic sustainability*
- *Encourage innovative design with particular emphasis on the integration of buildings and landscaped areas that contribute to the character of neighbourhoods.*

Provisions of the Rockdale DCP that provide useful guidance to the Proposal are discussed below.

### 5.3.1 Views and vistas

Section 4.1.1 of the Rockdale DCP sets out guidance for key views and vistas within the Bayside LGA.

*The city of Rockdale forms the backdrop to Botany Bay and the foreshores of the Cooks River. The ridgelines and higher points within the municipality were amongst the earliest parts of the city to be developed. There are many significant natural features, heritage items and buildings in the city that contribute to its identity. The preservation and wherever possible the enhancement of public views of these assets helps to maintain legibility and allows interpretation of the city's landscape and cultural features.*

The objectives of Section 4.1.1 are:

- *To maintain and enhance existing views to and from the Cooks River and Botany Bay*
- *To protect significant view corridors to landmarks and heritage items that contribute to a sense of place*
- *To ensure the appearance of development at highly visible sites complements the character of the area and its skyline*
- *To encourage view sharing as a means of ensuring equitable access to views from neighbouring properties*
- *To provide additional views and vistas from streets and other public spaces where opportunities arise.*

Controls in Section 4.1.1 that provide useful guidance to the Proposal include a requirement for view corridors to landmarks and significant heritage items must be protected where possible.

### 5.3.2 Heritage conservation

Section 4.1.2 of the Rockdale DCP provides guidance for heritage conservation. The objectives of Section 4.1.2 provide useful guidance to the Proposal and are:

- *To ensure that new development respects the natural and built heritage significance of Rockdale*
- *To conserve heritage items, including significant fabric, their curtilage and settings*
- *To ensure new development does not have an adverse impact upon the heritage significance of heritage items*
- *To encourage the reconstruction of heritage items that have been unsympathetically altered, including reinstatement of missing elements*
- *To ensure there is a sympathetic relationship between new built form and the historic streetscape in which a heritage item is located.*

### 5.4 Bayside West Precincts Plan 2036

The NSW Government's Planned Precincts program aims to ensure that the necessary infrastructure is in place to support the growth of Sydney. The Bayside West Precincts, comprising Cooks Cove and parts of the existing suburbs of Arncliffe and Banksia, were nominated for the Planned Precincts program by the former Rockdale City Council (now Bayside Council). The NSW Government endorsed the nomination in July 2014 (Arncliffe and Banksia) and 2015 (Cooks Cove).

The Bayside West Precincts Plan 2036 sets out strategic land use and infrastructure planning to guide the future transformation of the Bayside West Precincts. The Plan will inform future changes to the planning controls to enable the rezoning of the Arncliffe and Banksia Precincts, through future amendments to the Rockdale LEP.

At Banksia, the Bayside West Precincts extends from the Princes Highway to Railway Street and includes the Proposal site. The Bayside West Precincts Plan 2036 proposes the expansion and revitalisation of Banksia local centre and the rezoning of land between the station and the Princes Highway for higher density housing with mixed use opportunities.

## 6. Assessment of views and visual impact

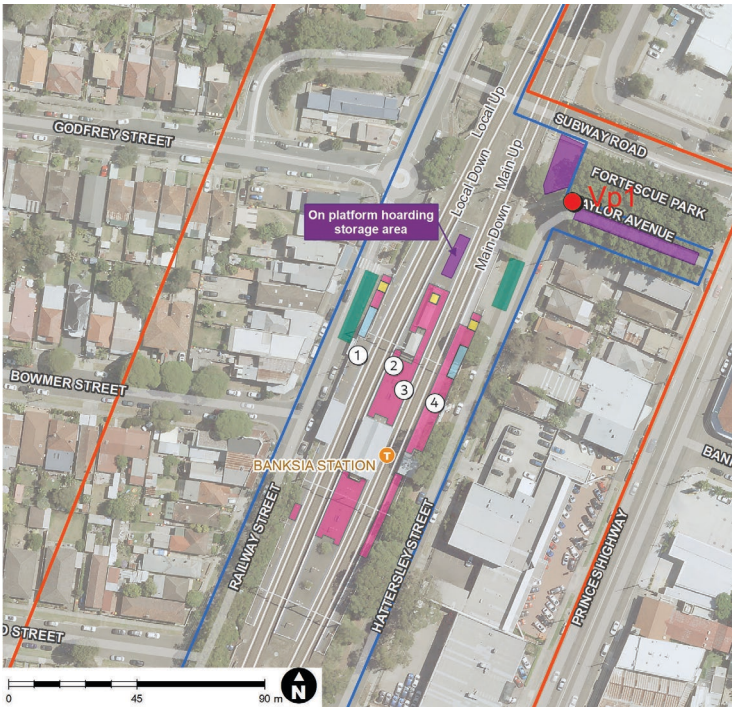
Chapter 6 describes the change in views from key publicly accessible locations from the areas surrounding the Proposal.

Eight viewpoints (Viewpoint 1 to Viewpoint 8) have been selected from key publicly accessible locations to assess the visual impact of the proposed works at Banksia Station. The location of each viewpoint is shown in Figure 6.1.



Figure 6.1: Banksia Station viewpoint locations

## 6.1 Viewpoint 1: Hattersley Street #1



Viewpoint 1 is located at the northern end of Hattersley Street where it intersects with Taylor Avenue north-east of the station.

This location is approximately 50 metres north-east of the proposed lift structure at Platform 4.

The yellow areas show the proposed lift structures, the magenta shows the proposed canopies while the purple and teal areas in the viewpoint location map identify the areas of potential construction compounds and laydown areas. The platforms are identified by numbers 1-4.

Figure 6.2 shows the view looking south-west towards the station.



Figure 6.2: Banksia Station Viewpoint 1 – View looking south-west (GPS 56H 328220, 6242435)

The new lift structure to be constructed at Platform 4 would be visible to the left of the centre of Figure 6.2. This work would include an upgrade of the existing stairs and would require the removal of the tree (Brisbane Box (*Lophostemon confertus*)) seen to the left of Figure 6.2.

The northern edge of the proposed canopy extension would be visible between breaks in the existing vegetation to the left of the proposed Platform 4 lift structure. From this distance, if visible it would not dominate the view. Where visible, it would appear consistent with other infrastructure in view.

One new accessible car parking space and one kiss-and ride-space would be installed along Hattersley Street; and a new kerb ramp at the Hattersley Street entrance. This would be located central to the image.

Electrical upgrades are proposed including a new transformer to be installed on land next to Fortescue Reserve to the right of Figure 6.2.

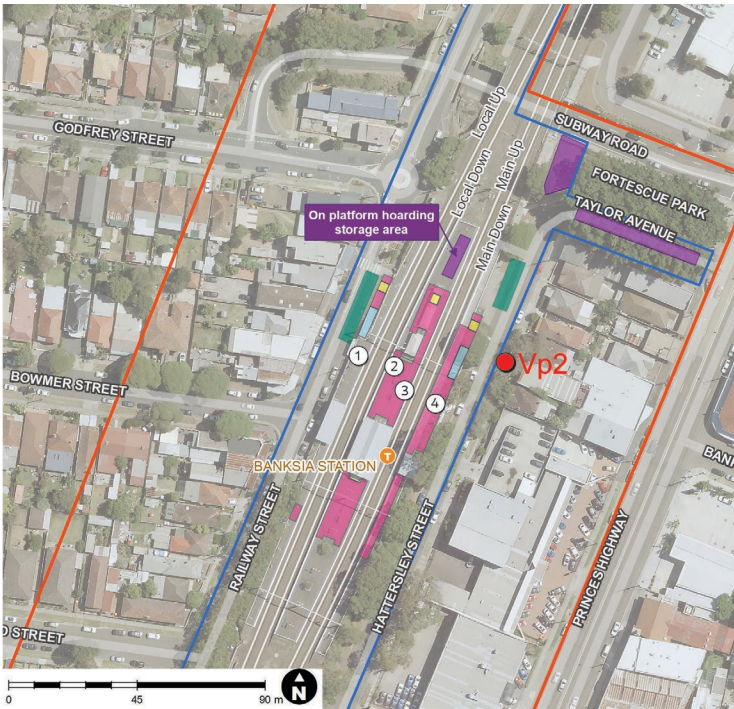


The main visual change in this view as a result of the Proposal would be the removal of a street tree, breaking the rhythm of street tree canopy along Hattersley Street, and the installation of the lift structure at this location.

Although there would be a noticeable change in the rhythm of the existing street tree canopy, over time and through sympathetic detailing and treatment, the insertion of the lift would not be an obvious change to the station's presence when viewed from Hattersley Street.

During construction and at the completion of construction the visual impact from Viewpoint 1 would be assessed as Moderate. Over time the new infrastructure and canopies would appear consistent with other rail infrastructure in view and the visual impact would reduce to Low-Moderate.

## 6.2 Viewpoint 2: Hattersley Street #2



Viewpoint 2 is located on Hattersley Road directly east of the station.

This viewing location is directly opposite the proposed new lift structure on Platform 4.

The yellow areas show the proposed lift structures, the magenta shows the proposed canopies while the purple and teal areas in the viewpoint location map identify the areas of potential construction compounds and laydown areas. The platforms are identified by numbers 1-4.

Figure 6.3 shows the view looking north-west towards the station.



Figure 6.3: Banksia Station Viewpoint 2 – View looking north-west (GPS 56H 328198, 6242378)

Figure 6.4 shows the same view with the proposed changes superimposed.



Figure 6.4: Banksia Station Viewpoint 2 – Photomontage

Figure 6.4 shows the proposed lift structure, upgrade of existing stairs and proposed canopies along Platform 4. The proposed lift structure and canopies on Platforms 2 and 3 are also visible below the canopy on Platform 4.

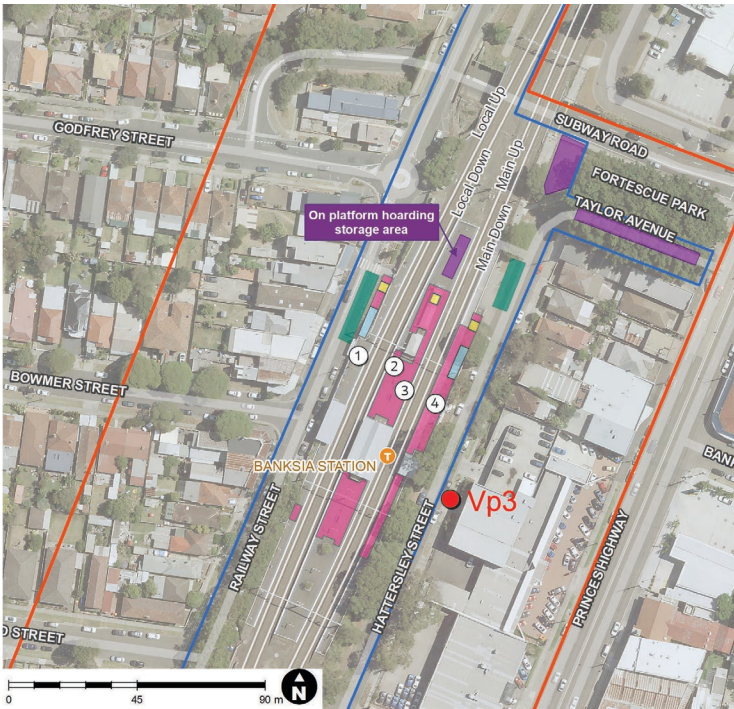
A new accessible car parking space and kiss-and-ride space would be installed along Hattersley Street as well as a new kerb ramp at the Hattersley Street entrance. This would be located to the centre and right of the image.

Although there would be a noticeable change in the rhythm of the existing street tree canopy, over time and through sympathetic detailing and treatment, the insertion of the lift would not be an obvious change to the station's presence when viewed from Hattersley Street.

The removal of the tree also opens up a clear unobstructed view to the lift structure and new canopies.

With this viewpoint located directly opposite the Hattersley entrance to Banksia Station, the tree proposed to be removed and the Platform 4 Lift structure, the Proposal would cause a noticeable change in views. This change in view during construction and at the completion of construction would be a High level of visual impact. Overtime the new infrastructure and canopies would appear consistent with other rail infrastructure in view and the visual impact would reduce to Moderate.

### 6.3 Viewpoint 3: Hattersley Street #3



Viewpoint 3 is located on Hattersley Road south-east of the station.

This viewing location is approximately 15 metres east of the southern section of the canopy proposed on Platform 4.

The yellow areas show the proposed lift structures, the magenta shows the proposed canopies while the purple and teal areas in the viewpoint location map identify the areas of potential construction compounds and laydown areas. The platforms are identified by numbers 1-4.

Figure 6.5 shows the view looking west towards the station.



Figure 6.5: Banksia Station Viewpoint 3 – View looking west (GPS 56H 328179, 6242332)

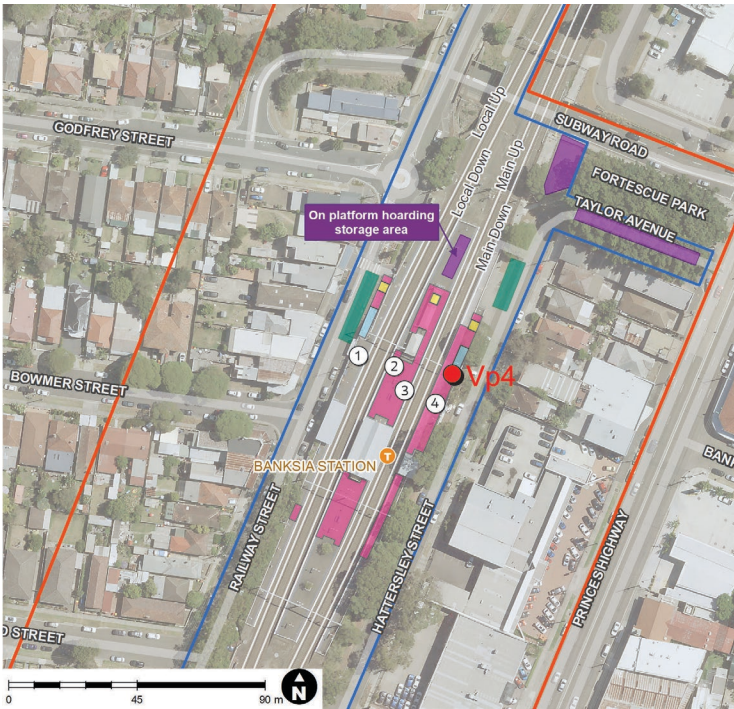
The new lift structure to be constructed at Platform 4 would be visible to the right of Figure 6.5. This work would include an upgrade of the existing stairs and would require the removal of the tree seen to the right of Figure 6.5. The removal of the tree would break the rhythm of tree canopy along Hattersley Street and would open up views to existing and proposed infrastructure at the northern end of Banksia Station.

The northern section of the proposed canopy extension would be visible between breaks in the existing vegetation to the right of the existing heritage building on Platform 4 central to the view. The southern section of proposed canopy extension would be visible between breaks in the existing vegetation to the left. The canopies where visible would not dominate the view and would appear consistent with other infrastructure in view and within the surrounding area.

Although there would be a noticeable change in the rhythm of the existing street tree canopy, over time and through sympathetic detailing and treatment, the insertion of the lift would not be an obvious change to the station’s presence when viewed from Hattersley Street.

This change in view during construction and at the completion of construction would be a Low level of visual impact. Over time the new infrastructure and canopies would appear consistent with other rail infrastructure in view and the visual impact would reduce to Low-Negligible.

### 6.4 Viewpoint 4: Platform 4



Viewpoint 4 is located within Banksia Station and is taken from the top of the existing stairs to Platform 4.

The yellow areas show the proposed lift structures, the magenta shows the proposed canopies while the purple and teal areas in the viewpoint location map identify the areas of potential construction compounds and laydown areas. The platforms are identified by numbers 1-4.

Figure 6.6 shows the existing view looking south-west from Platform 4 towards Platforms 2 and 3.



Figure 6.6: Banksia Station Viewpoint 4 – View looking south-west (GPS 56H 328179, 6242374)

Figure 6.7 shows the same view with the proposed changes superimposed.



Figure 6.7: Banksia Station Viewpoint 4 – Photomontage

Figure 6.7 shows the proposed canopy on Platform 4 overhead, and the proposed canopies on Platforms 2 and 3. The proposed Platform 4 stair upgrade would be located behind this view.

Visually, the proposed canopy extensions would be a noticeable change from platform areas.

Figure 6.8 shows the existing view looking west to north-west from Platform 4 towards Platforms 2 and 3.



Figure 6.8: Banksia Station Viewpoint 4 – View looking west- north-west

Figure 6.9 shows the same view with the proposed changes superimposed.



Figure 6.9: Banksia Station Viewpoint 4 – Photomontage

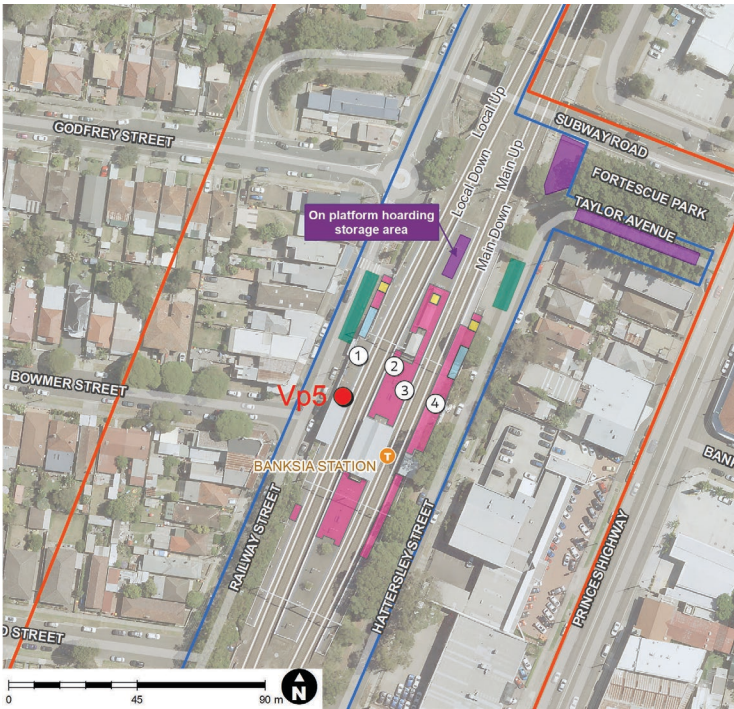
Figure 6.9 shows the removal of the existing underpass lantern structure on Platforms 2 and 3 and the installation of the proposed new lift structure on Platforms 2 and 3, with the proposed lift structure on Platform 1 visible behind.

There would also be an upgrade of the existing surfaces (re-grading/re-surfacing) of all four platforms to provide compliant accessible paths to station amenities and between the new lifts and boarding assistance zones.

During construction and at the completion of construction these installations would be a noticeable change and would dominate the view from Platform 4. However, it is important to note this view would be experienced by regular commuters and would be in keeping with other infrastructure seen throughout their journey. This change in view would be assessed as Moderate-High. Over time the new infrastructure and canopies would appear consistent with other rail infrastructure in view and the visual impact would reduce to Moderate.

The implications on heritage values of these changes are discussed within the Statement of Heritage Impact prepared for Banksia Station.

### 6.5 Viewpoint 5: Platform 1



Viewpoint 5 is located within Banksia Station and is taken from the northern edge of the existing building on Platform 1.

The yellow areas show the proposed lift structures, the magenta shows the proposed canopies while the purple and teal areas in the viewpoint location map identify the areas of potential construction compounds and laydown areas. The platforms are identified by numbers 1-4.

Figure 6.10 shows the existing view looking north to north-east from Platform 1 towards Platforms 2 and 3.



Figure 6.10: Banksia Station Viewpoint 5 – View looking north to north-east (GPS 56H 328139, 6242366)

Figure 6.11 shows the same view with the proposed changes superimposed.



Figure 6.11: Banksia Station Viewpoint 5 – Photomontage



Figure 6.11 shows the installation of the new lift structure and stairs on Platform 1, as well as the removal of the existing underpass lantern structure on Platforms 2 and 3 and the installation of the proposed new lift structure on Platforms 2 and 3. The reconfiguration and upgrade of the stairs on Platform 4 is visible to the right of the image under the new canopy on Platforms 2 and 3.

There would also be an upgrade of the existing surfaces (re-grading/re-surfacing) of all four platforms to provide compliant accessible paths to station amenities and between the new lifts and boarding assistance zones.

Figure 6.12 shows the existing view looking east from Platform 1 towards Platforms 2 and 3.



Figure 6.12: Banksia Station Viewpoint 5 – View looking east

Figure 6.13 shows the same view with the proposed changes superimposed.



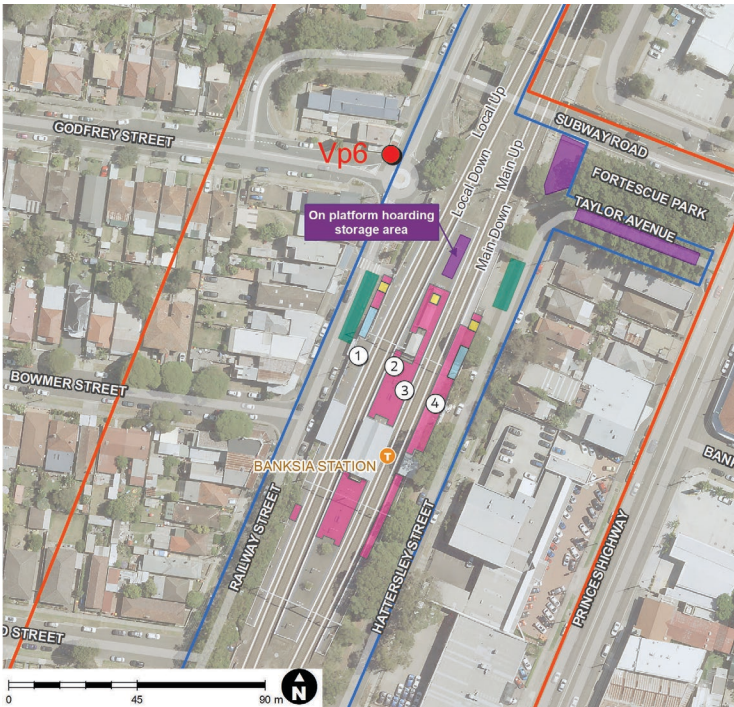
Figure 6.13: Banksia Station Viewpoint 5 – Photomontage

Figure 6.13 shows the proposed canopy on Platforms 2 and 3. The proposed Platform 4 canopy is also visible behind. Visually, the proposed canopy extensions would be a noticeable change from platform areas.

During construction and at the completion of construction these installations would be a noticeable change and would dominate the view from Platform 1. However, it is important to note this view would be experienced by regular commuters and would be in keeping with other infrastructure seen throughout their journey. This change in view would be assessed as Moderate-High. Over time the new infrastructure and canopies would appear consistent with other rail infrastructure in view and the visual impact would reduce to Moderate.

The implications on heritage values of these changes are discussed within the Statement of Heritage Impact prepared for Banksia Station.

## 6.6 Viewpoint 6: Intersection of Railway and Godfrey Streets



Viewpoint 6 is located at the intersection of Railway and Godfrey Streets.

This viewing location is approximately 40 metres north-east of the proposed lift structure on Platform 1 at the Railway Street entrance.

The yellow areas show the proposed lift structures, the magenta shows the proposed canopies while the purple and teal areas in the viewpoint location map identify the areas of potential construction compounds and laydown areas. The platforms are identified by numbers 1-4.

Figure 6.14 shows the view looking south-east towards the areas of proposed works.



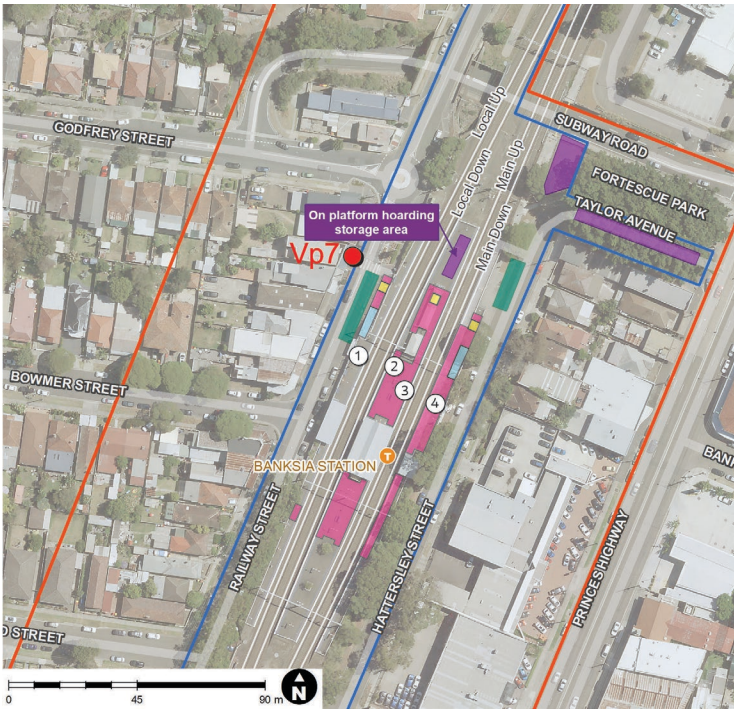
Figure 6.14: Banksia Station Viewpoint 6 – View looking south-east (GPS 56H 328157, 6242452)

The new lift structure and landing to provide access between Railway Street, Hattersley Street, the existing underpass and the platforms would be constructed at Platform 1 and would be visible to the centre of Figure 6.14. A new kerb ramp would be installed at the Railway Street pedestrian crossing and the footpath would be widened to 2.5 metres between the lift and bus stop on the eastern side of Railway Street.

Existing rail infrastructure on Platform 1, including fences and signage along with the proposed new lift structures would filter views to the proposed canopies. The canopies would not be dominant elements and would be consistent with the existing rail infrastructure found in the area.

During construction and at the completion of construction the change in view would be a Low level of visual impact from the intersection of Railway and Godfrey Streets. Over time and through sympathetic detailing and treatment, the insertion of the lift would not be an obvious change to the station's presence and the new infrastructure and canopies would appear consistent with other rail infrastructure in view and the visual impact would reduce to Low-Negligible.

### 6.7 Viewpoint 7: Railway Street pedestrian crossing



Viewpoint 7 is located on Railway Street at the pedestrian crossing.

This viewing location is located opposite the proposed new lift structure on Platform 1.

The yellow areas show the proposed lift structures, the magenta shows the proposed canopies while the purple and teal areas in the viewpoint location map identify the areas of potential construction compounds and laydown areas. The platforms are identified by numbers 1-4.

Figure 6.15 shows the view looking east towards the station.



Figure 6.15: Banksia Station Viewpoint 7 – View looking south-east (GPS 56H 328145, 6242413)

Visually dominant features at this location include the painted mural, white loop-top fencing, red brick retaining walls, overhead gantry and transmission line.

Figure 6.16 shows the same view with the proposed changes superimposed.



Figure 6.16: Banksia Station Viewpoint 7 – Photomontage

Figure 6.17 shows an enlarged view of the existing features around the Railway Street entrance to Banksia Station.



Figure 6.17: Banksia Station Viewpoint 7 – 80-degree view looking south-east to south

Figure 6.18 shows the same enlarged view with the proposed changes superimposed.



Figure 6.18: Banksia Station Viewpoint 7 Photomontage – 80-degree view

Figure 6.18 shows the new lift structure and landing that would be constructed at Platform 1 to provide access between Railway Street, Hattersley Street, the existing underpass and the platforms.

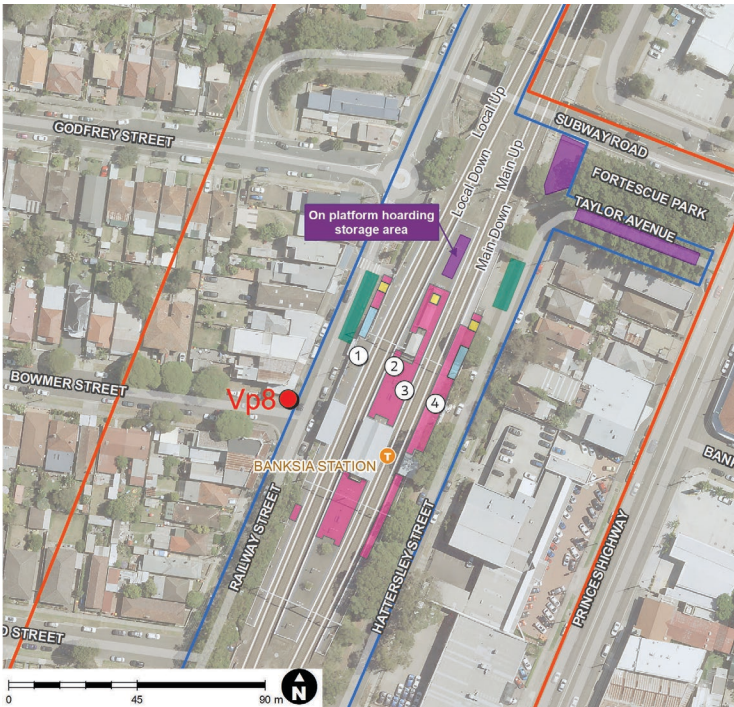
A new kerb ramp would be installed at the Railway Street pedestrian crossing as well as a widening of the footpath to 2.5 metres between the lift and bus stop on the eastern side of Railway Street.

The new lift structure and proposed canopies on Platforms 2 and 3 are visible behind.

Due to the elevated nature of Banksia Station, the new lift structure height on Platform 1 appears to be accentuated and would dominate the view. Over time and through sympathetic detailing and treatment, the insertion of the lift would not be an obvious change to the station's presence when viewed from Railway Street.

During construction and at the completion of construction these installations would be a noticeable change and would dominate the view from Railway Street pedestrian crossing and would be assessed as High. Over time the new infrastructure and canopies would appear consistent with other rail infrastructure in view and the visual impact would reduce to Moderate.

### 6.8 Viewpoint 8: Corner Railway and Bowmer Streets



Viewpoint 8 is located at the corner of Railway Street and Bowmer Street.

This viewing location is approximately 75 metres south-west of the proposed lift structure on Platform 1.

The yellow areas show the proposed lift structures, the magenta shows the proposed canopies while the purple and teal areas in the viewpoint location map identify the areas of potential construction compounds and laydown areas. The platforms are identified by numbers 1-4.

Figure 6.19 shows the view looking north-east towards the station.



Figure 6.19: Banksia Station Viewpoint 8 – View looking north-east (GPS 56H 328124, 6242366)

The new lift structure and landing to provide access between Railway Street, Hattersley Street, the existing underpass and the platforms would be constructed at Platform 1 and be visible to the left of Figure 6.19.

A new kerb ramp would be installed at the Railway Street pedestrian crossing and the footpath would be widened to 2.5 metres between the lift and bus stop on the eastern side of Railway Street.

Canopies on Platforms 2 and 3 and on the south of Platform 1, where visible canopy areas would not be visually dominant elements in the views and would be consistent with existing rail infrastructure found in the area.

During construction and on the first day of completion the change in view from this location would be a Low level of visual impact from the corner Railway and Bowmer Streets. Over time and through sympathetic detailing and treatment, the insertion of the lift would not be an obvious change to the station’s presence and the new infrastructure and canopies would appear consistent with other rail infrastructure in view and the visual impact would reduce to Negligible.

## 6.9 Publicly accessible viewpoints summary

The main visual changes brought about by the Proposal would be the installation of the three new lift structures, the installation of the proposed canopies and the removal of a street tree on Hattersley Street at the station entrance. The removal of the tree would break the rhythm of tree canopy along Hattersley Street and open up views to the proposed lift structures and new canopies from Hattersley Street.

Although there would be a noticeable change in the rhythm of the existing street tree canopy, over time and through sympathetic detailing and treatment, the insertion of the lift on Platform 4 would not be an obvious change to the station's presence when viewed from Hattersley Street.

Due to the elevated nature of Banksia Station, the new lift structure height on Platform 1 appears to be accentuated and would dominate the view from Railway Street pedestrian crossing. Over time and through sympathetic detailing and treatment, the insertion of the lift would not be an obvious change to the station's presence when viewed from Railway Street.

The Proposal would cause a noticeable change in views. This change in view would range from a Low level of visual impact to a High level of visual impact. This is dependent on the distance to the view, the sensitivity of the viewpoint and the visibility of the Proposal. Overtime the new infrastructure and canopies would appear consistent with other rail infrastructure in view and the visual impact would reduce.

Table 6.1 outlines the visual impact for each viewpoint during construction and the visual impact during operation.

Table 6.1: Viewpoint Summary Table

Viewpoint Number	Assessment during construction	Assessment during operation
1 – Hattersley Street #1	Moderate	Low - Moderate
2 – Hattersley Street #2	High	Moderate
3 – Hattersley Street #3	Low	Low - Negligible
4 – Platform 4	Moderate - High	Moderate
5 – Platform 1	Moderate - High	Moderate
6 – Intersection of Railway and Godfrey Streets	Low	Low-Negligible
7 – Railway Street	High	Moderate
8 – Corner Railway and Bowmer Streets	Low	Negligible

## 7. Mitigation measures

Chapter 7 sets out mitigation measures that may assist with managing the predicted visual impact 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 Detailed Design

Detailed Design of the Proposal should consider the following mitigation measures to reduce the visual impact and create a development that is in keeping with the character of Banksia Station. These measures include:

- Materials should be selected to be consistent with existing elements found within the station. A colour palette that is complementary to the heritage character of Banksia Station should be selected.
- Where possible, the design should reduce the bulk and dominance of the lift structures from the public domain.
- Consideration should be given to the inclusion of additional landscaping to offset the removal of the street tree in Hattersley Street and also assist to filtering views to the elevated lift structures.

### 7.2 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.

During construction, graffiti would be removed in accordance with TfNSW's standard requirements.

Construction of the Proposal must be carried out in accordance with the *Vegetation Management (Protection and Removal) Guideline* (TfNSW, 2019).

### 7.3 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 into adjacent visually sensitive properties and would include downward direct lights, baffling and shielding.



## 8. Conclusion

This visual impact assessment has reviewed the change in views from the public realm that might be brought about by the proposed TAP and MTMS canopy upgrade works and assessed the magnitude of those changes in the context of these views.

The Proposal would provide the following benefits:

- a station that provides improved accessibility to people with a disability, limited mobility, parents/carers with prams and customers with luggage;
- modernisation of the existing station building and facilities that meet the needs of a growing population;
- improved interchange and access facilities for all customers using Banksia Station; and
- canopies that protect customers from rain and sun along Platforms 2 and 3 and Platform 4 and promote use of the length of these platforms and thereby reduce train dwell times and improve timetable reliability. The canopy on Platform 1 would protect customers from rain and sun at the lift and boarding assistance zone.

The main visual changes brought about by the Proposal would be the installation of the three new lift structures, the installation of the proposed canopies and the removal of a street tree.

The removal of a street tree on Hattersley Street at the station entrance would break the rhythm of tree canopy along Hattersley Street and open up views to the proposed lift structures and new canopies from Hattersley Street.

The Proposal would also reduce the visibility of heritage structures on the station platforms from Railway Street and Hattersley Street due to the proposed lifts and canopies. The implications on heritage values from these changes are discussed within the Statement of Heritage Impact (SoHI) prepared for Banksia Station.

The Proposal would cause a noticeable change in views. This change in view would range from a Low level of visual impact to a High level of visual impact. This is dependent on the distance to the view, the sensitivity of the viewpoint and the visibility of the Proposal. Overtime the new infrastructure and canopies would appear consistent with other rail infrastructure in views from Railway Street, Hattersley Street and from within the station itself and the visual impact would reduce.

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## References

Henry Dreyfuss Associates, 2012, *The Measure of Man and Woman*, Revised Edition, John Wiley & Sons

Julius Panero & Martin Zelnik (1979), *Human Dimension and Interior Space*, Witney Library of Design

TfNSW, 2016a, *Around the Tracks – Urban Design for Heavy and Light Rail*, (Interim), Sydney

TfNSW, 2016b, *Managing Heritage Issues in Rail Projects Guidelines* (Interim), Sydney

TfNSW, 2016c, *Creativity Guidelines for Transport Systems* (Interim), Sydney

TfNSW, 2019, *Vegetation Management (Protection and Removal) Guideline*, Sydney

## **Appendix A. Photomontages**

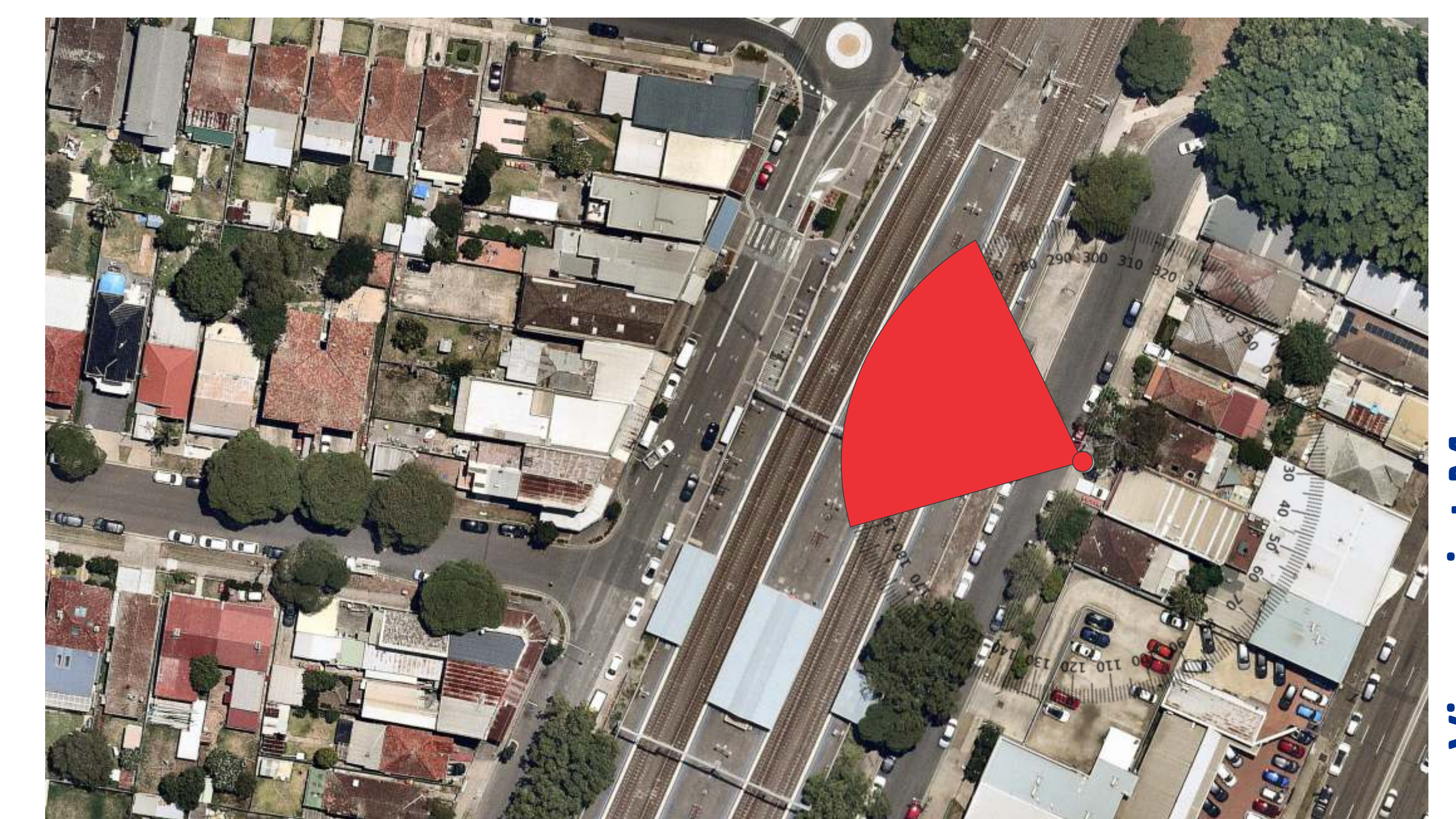
View looking south west to north west



Existing view



Photomontage



Viewpoint Map

80° view looking south west to west



Existing view

80° view looking south west to west



80° view looking west to north west



Existing view

80° view looking west to north west



Photomontage



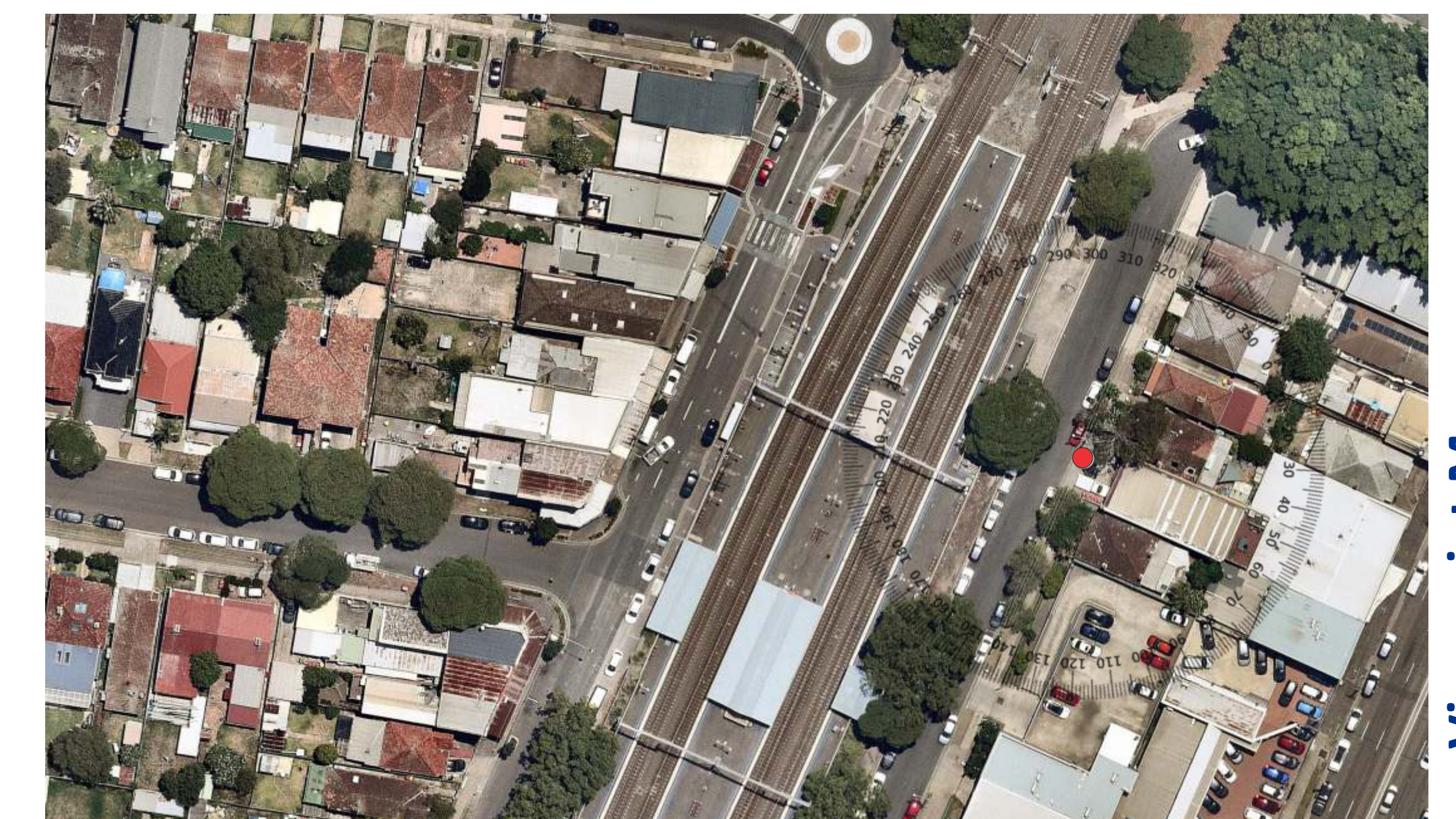
View looking south west to north west



Existing View



Wireframe View



Viewpoint Map

View looking south to north



Existing view



Photomontage

← See Sheet 2 →

← See Sheet 3 →



Viewpoint Map

80° view looking south west to west



Existing view



Photomontage

## Jacobs

80° view looking north west



Existing view



Photomontage

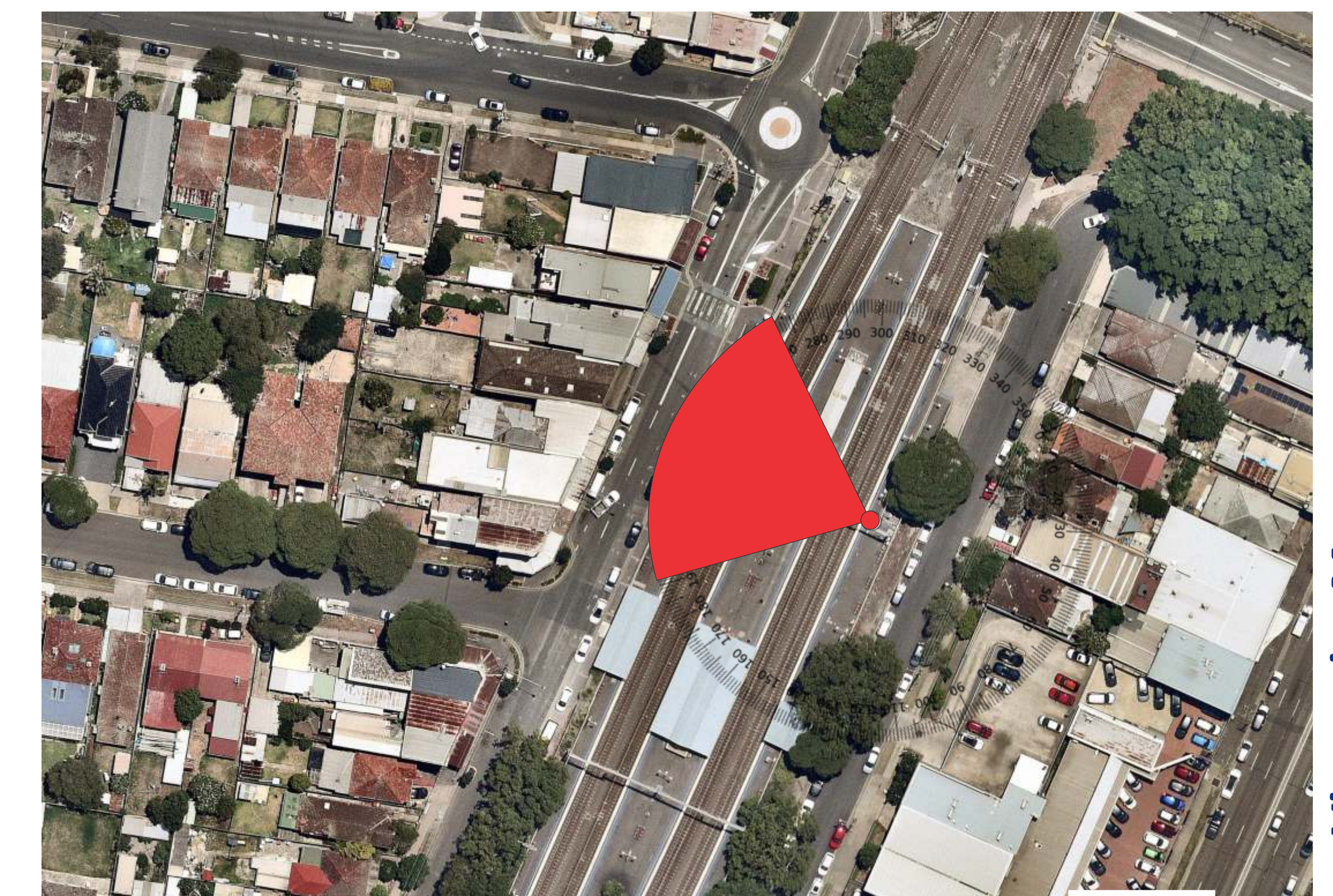
View looking south to north



Existing View



Wireframe View



Viewpoint Map

View looking north to south



Existing view



Photomontage

← See Sheet 2 →

← See Sheet 3 →

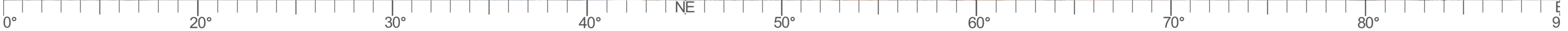


Viewpoint Map

80° view looking north east



Existing view

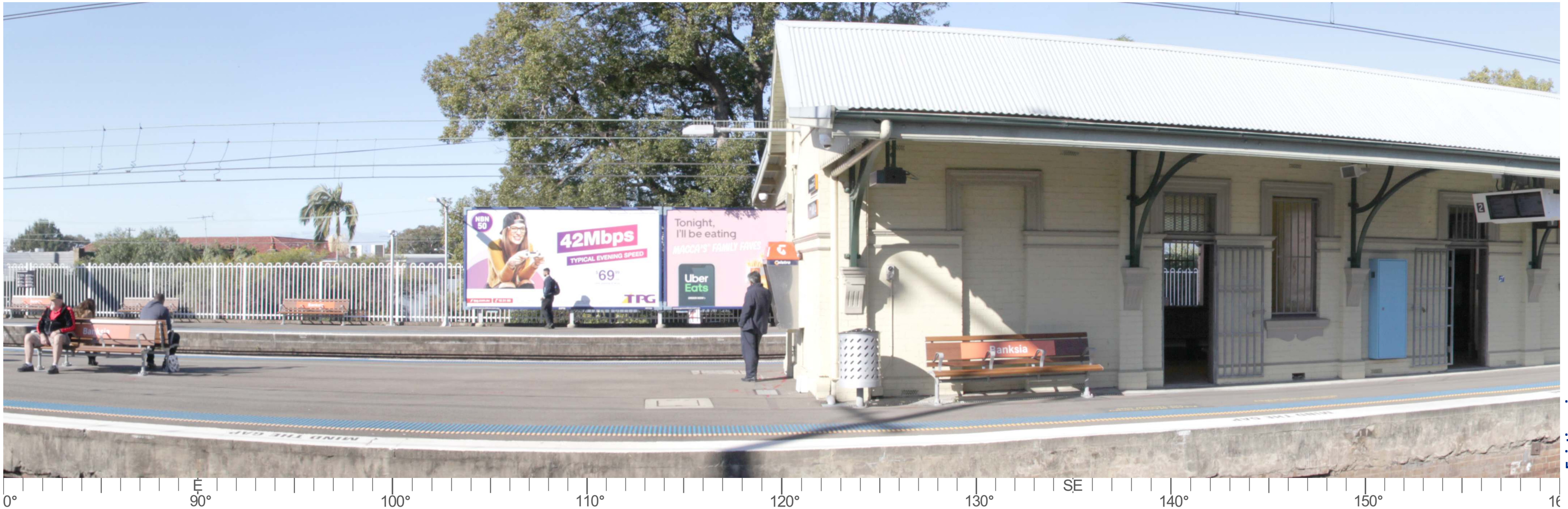


Photomontage

## Jacobs

BANKSIA STATION TAP UPGRADE - VP 5  
 COORDINATES: 56 H, 328139m E, 6242366m S  
 PREPARED BY: AE  
 SHEET: 2/4 DATE: 01/05/2020

80° view looking east to south east



Existing view



Photomontage



View looking north to south



Existing View



Wireframe View



Viewpoint Map

View looking north to south west



Existing view



Photomontage

← See Sheet 2 →



Viewpoint Map



Existing view



Photomontage

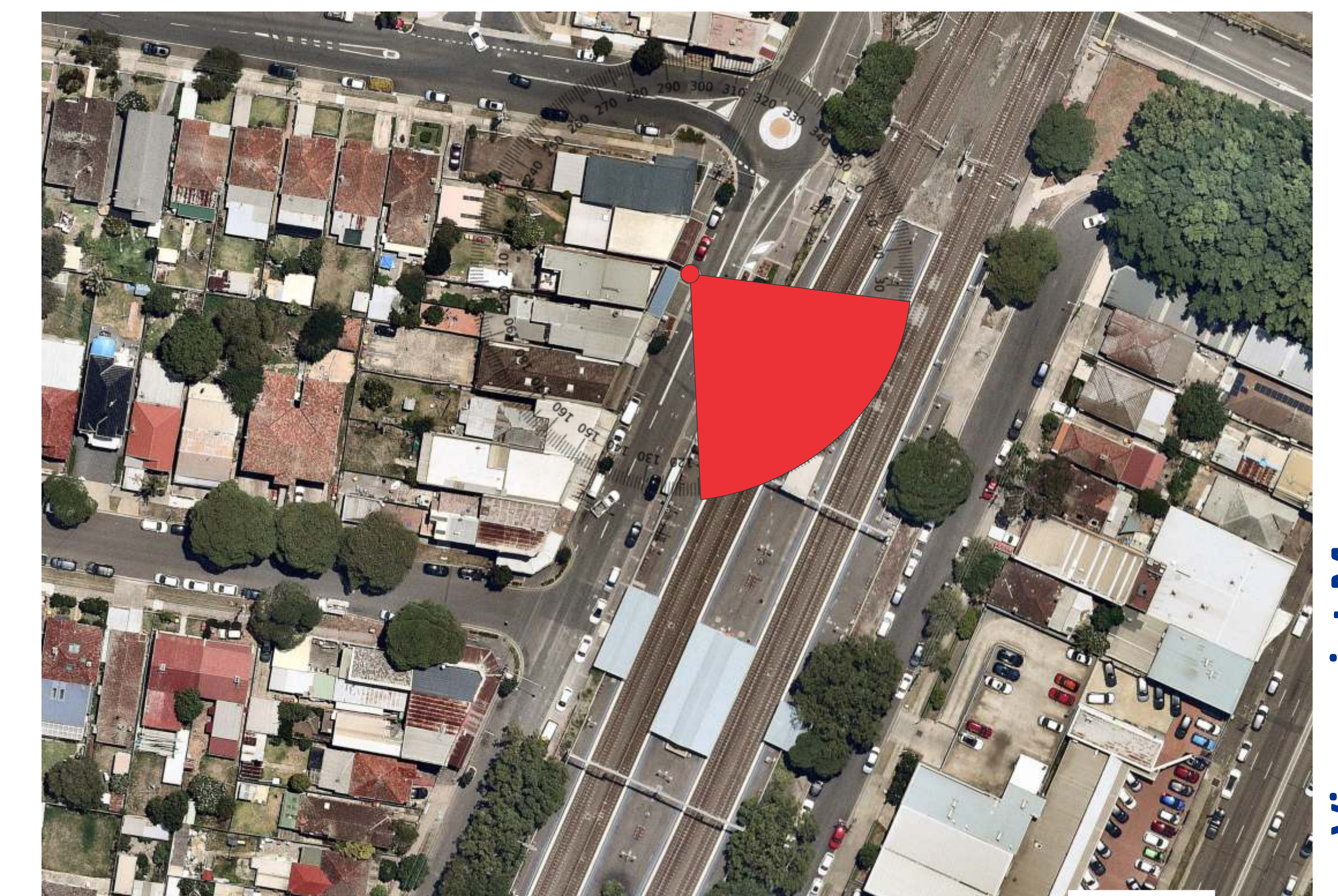
View looking north to south west



Existing View



Wireframe View



Viewpoint Map