



Blackheath Station Upgrade

Landscape and Visual Impact Assessment

Transport for NSW

February 2022

→ The Power of Commitment



GHD Pty Ltd | ABN 39 008 488 373|

180 Lonsdale Street, Level 9

Melbourne, Victoria 3000, Australia

T +61 3 8687 8000 | **F** +61 3 8732 7046 | **E** melmail@ghd.com | **ghd.com**

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Project manager	John McManus
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Terminology

Terminology	Definition
Aesthetics	Relating to the sense of the beautiful or science of aesthetics, ie the deduction, from nature and taste, the rules and principles of beauty.
Impact	The effect of a proposal, which can be adverse or beneficial, when measured against an existing condition.
Landscape	All aspects of a tract of land, including landform, vegetation, buildings, villages, towns, cities and infrastructure.
Landscape character	The combined quality of built, natural and cultural aspects which make up an area and provide its unique sense of place.
Landscape character zone	An area of landscape with similar properties or strongly defined spatial qualities, distinct from areas immediately nearby.
Magnitude	The measurement of the scale, form and character of a development proposal when compared to the existing condition. In the case of visual assessment this also relates to how far the proposal is from the viewer. Combines with sensitivity, magnitude provides a measurement of impact.
Proposal	The construction and operation of the Blackheath Station Upgrade
Project site	The area within which all the Proposal construction and operational elements will be contained within.
Sensitivity	The sensitivity of a landscape character zone or view and its capacity to absorb change of the nature of the proposal. In the case of visual impact this also relates to the type of viewer and number of viewers. Combined with magnitude, sensitivity provides a measurement of impact.
Significant	In the context of Environmental Impact Assessment, after analysing the extent (type, size, scope, intensity and duration) and nature (predictability, resilience of the environment, reversibility, ability to manage/mitigate, level of public interest) of a proposal, an expected level of impact of a proposal which requires an EIS to be undertaken. The term should be avoided in landscape character and visual impact assessments if the expected level of impacts is below the threshold.
Study area	Consists of land in the vicinity of, and including, the proposal site. The study area is a wider area surrounding the proposal site as defined in this assessment, including land that has the potential to be indirectly impacted by the Proposal.
View	The sight or prospect of a landscape or scene.
Viewpoint	The point from which a view is observed that represents a visual receiver.
Viewshed	The area within which a project can be seen at eye level above ground. Its extent will usually be defined by a combination of landform, vegetation and built elements.
Visibility	The state or fact of being visible or seen.
Visual impact	The impact on the views from residences, workplaces and public places.
Visual receiver	Individuals and/or defined groups of people who have the potential to be affected by a proposal.
Zone of Theoretical Visibility	A map, usually digitally produced, showing areas of land within which a development is theoretically visible.

Note: 1. Partially adapted from: *Environmental impact assessment practice note EIA-N04 – Guideline for landscape character and visual impact assessment, Version 2.2* (Transport for New South Wales, 2020).

Abbreviations

Abbreviations	Definition
3D	Three dimensional
BMLEP	Blue Mountains Local Environmental Plan 2015
DCP	Development Control Plan
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
ESRI	Environmental Systems Research Institute
GHD	GHD Pty Ltd
GIS	Geographic Information System
km	Kilometre
LCZ	Landscape character zone
LEP	Local Environmental Plan
LGA	Local government area
LVIA	Landscape and visual impact assessment
m	Metre
TAHE	Transport Asset Holding Entity of NSW
VP	Viewpoint
ZTV	Zone of theoretical visibility

1. Introduction

1.1 Purpose of this report

This Landscape and Visual Impact Assessment (LVIA) has been prepared by GHD on behalf of Transport for NSW to assess the potential impacts of the Blackheath Station Upgrade. For the purposes of these works, Transport for NSW is the proponent and the determining authority under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The LVIA investigates the impacts related to the proposed accessibility, security and amenity upgrades associated with Transport for NSW's Transport Access Program at Blackheath Station (the Proposal).

The purpose of this report is to undertake a landscape and visual impact assessment to inform the Proposal's Review of Environmental Factors. This report provides recommendations for managing and minimising identified landscape and visual issues that may arise from the Proposal.

The report comprises the following:

- an understanding of the landscape and visual attributes of the study area
- identification of sensitivities in relation to landscape and visual change associated with the Proposal
- assessment of potential landscape and visual impacts associated with the Proposal
- provision of recommendations for managing and minimising identified landscape and visual impacts arising from the Proposal.

1.2 Overview

The NSW Government is committed to facilitating and encouraging the use of public transport, by upgrading train stations to make them more accessible and by improving interchanges around stations with other modes of transport such as bicycles, buses and cars.

The Transport Access Program is a NSW Government initiative to provide a better experience for public transport customers by delivering accessible, modern, secure and integrated transport infrastructure where it is needed most.

Blackheath Station does not currently meet key requirements of the Commonwealth *Disability Standards for Accessible Public Transport 2002* (DSAPT) or the Commonwealth *Disability Discrimination Act 1992* (DDA). There is currently no compliant accessible path to the station platforms for people with reduced mobility or parents/carers with prams, no lift facilities, and some paths of travel from the surrounding footpath and roads are not compliant with requirements of the DDA. The Proposal would involve upgrade works to Blackheath Station including the provision of three new lifts, provision of an accessible and formal kiss and ride bay and taxi zone, and improved bicycle parking facilities.

The station is located 125 kilometres west of the Sydney Central Business District (CBD) in the suburb of Blackheath and is serviced by the Blue Mountains Line. Platform 1 provides train services east towards Katoomba and the CBD and Platform 2 provides train services west towards, Mount Victoria and Lithgow. The Proposal is located within the Blue Mountains local government area. The location of the Proposal in a regional and local context is shown in Figure 1.1 and Figure 1.2.

The key features of the Proposal are summarised as follows:

- provision of three new lifts, associated landings and canopies providing access to the station platforms from Station Street and the Great Western Highway station entry area
- provision of an entry plaza from the Great Western Highway including a new ramp and stairs from the footpath to the lift landing and existing stairs

- upgrade of the existing kiss and ride bay / taxi zone along the Great Western Highway, including regrading, line marking, installation of bike hoops, sheltered seating and an upgrade of the accessible path to the station entry
- provision of an upgraded accessible path from lift 2 to the station platforms
- upgrade of the accessible path from the commuter car park to lift 3, on the Station Street side
- provision of two accessible parking spaces and extension of the Station Street commuter car park and localised regrade of areas of the existing commuter car park
- provision of widened doors to the waiting room and the family accessible toilet
- upgrades to the station power supply, including provision of a new main switch board
- provision of a new accessible water bubbler on the island platform by the station building.

1.3 Report structure

This report comprises of the following sections:

Section 1 – Introduction: provides background information and an overview of the Proposal and assessment.

Section 2 – Methodology: describes the methodology used for the purpose of this report.

Section 3 – Proposal description: describes the proposed development, with emphasis on identifying the key sources of potential impacts relevant to this assessment.

Section 4 – Legislation and policy: provides an overview of relevant legislation and policy.

Section 5 – Existing landscape and visual environment: provides an overview and describes the landscape and visual environment within the study area.

Section 6 – Landscape character impact assessment: landscape character zones are identified and assessed against the proposed development.

Section 7 – Visual impact assessment: representative viewpoint locations are identified and assessed against the proposed development.

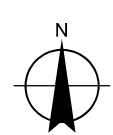
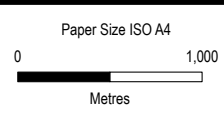
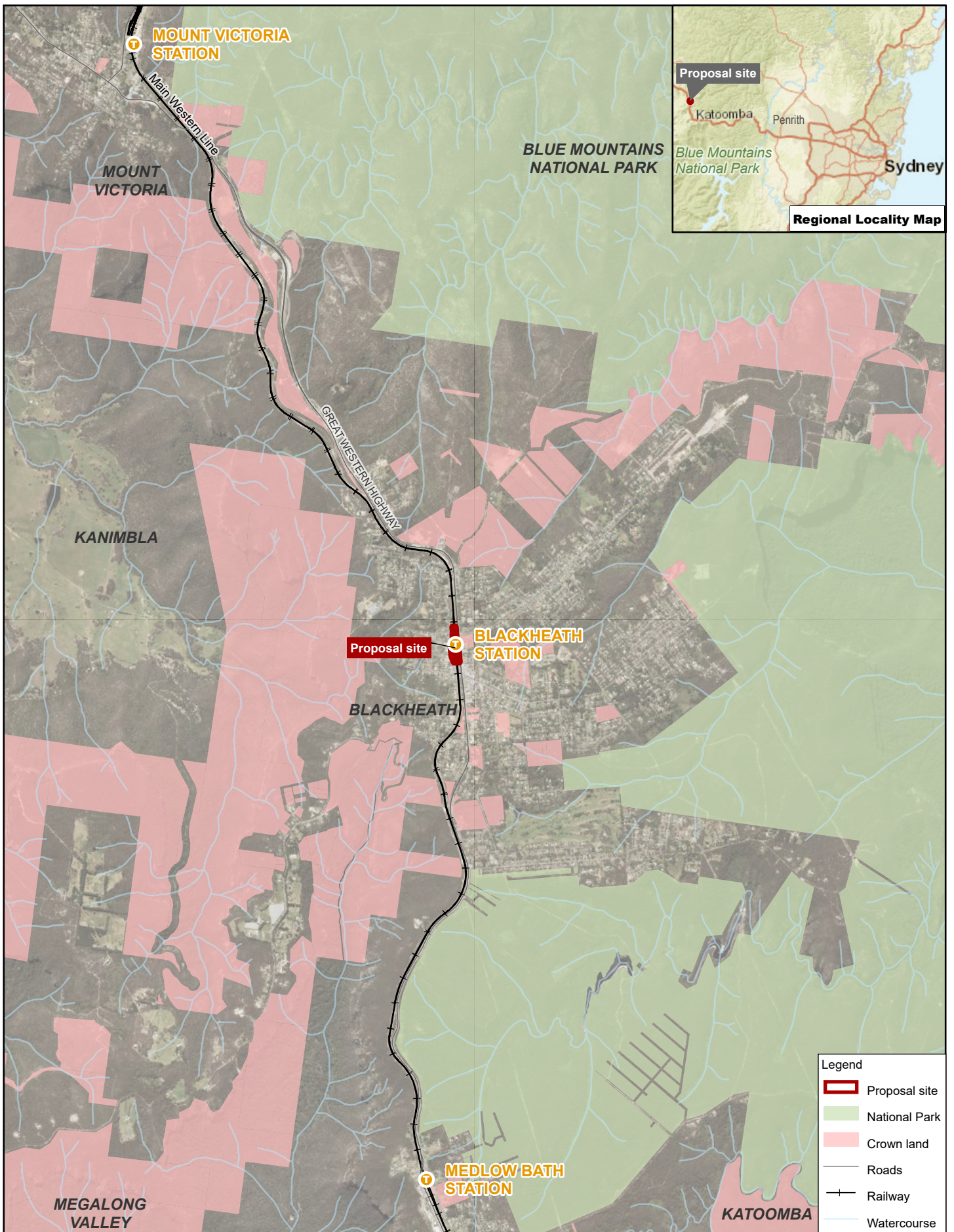
Section 8 – Mitigation measures: recommendations and mitigation measures are provided in response to identified impacts as a result of the construction and operation of the Proposal.

Section 9 – Conclusion: presents a summary of the Landscape and Visual Impact Assessment.

1.4 Assumptions

The methodology includes the following assumptions and limitations:

- There is no national guidance on the assessment of landscape and visual impacts specific to Australia. However, the industry typically refers to the guidelines as outlined in section 2.1.
- The assessment aims to be objective and describe any changes factually. While potential changes resulting from the Proposal are defined, the significance of these changes requires qualitative (subjective) judgements. This assessment's conclusion therefore combines objective measurement and professional interpretation. While this assessment aims to be objective, it is recognised that visual impact assessment can be subjective, and individuals are likely to associate different visual experiences to the study area.
- The assessment is based on the information provided to GHD at the time of writing.
- This assessment does not include landscape and visual impacts from lighting.



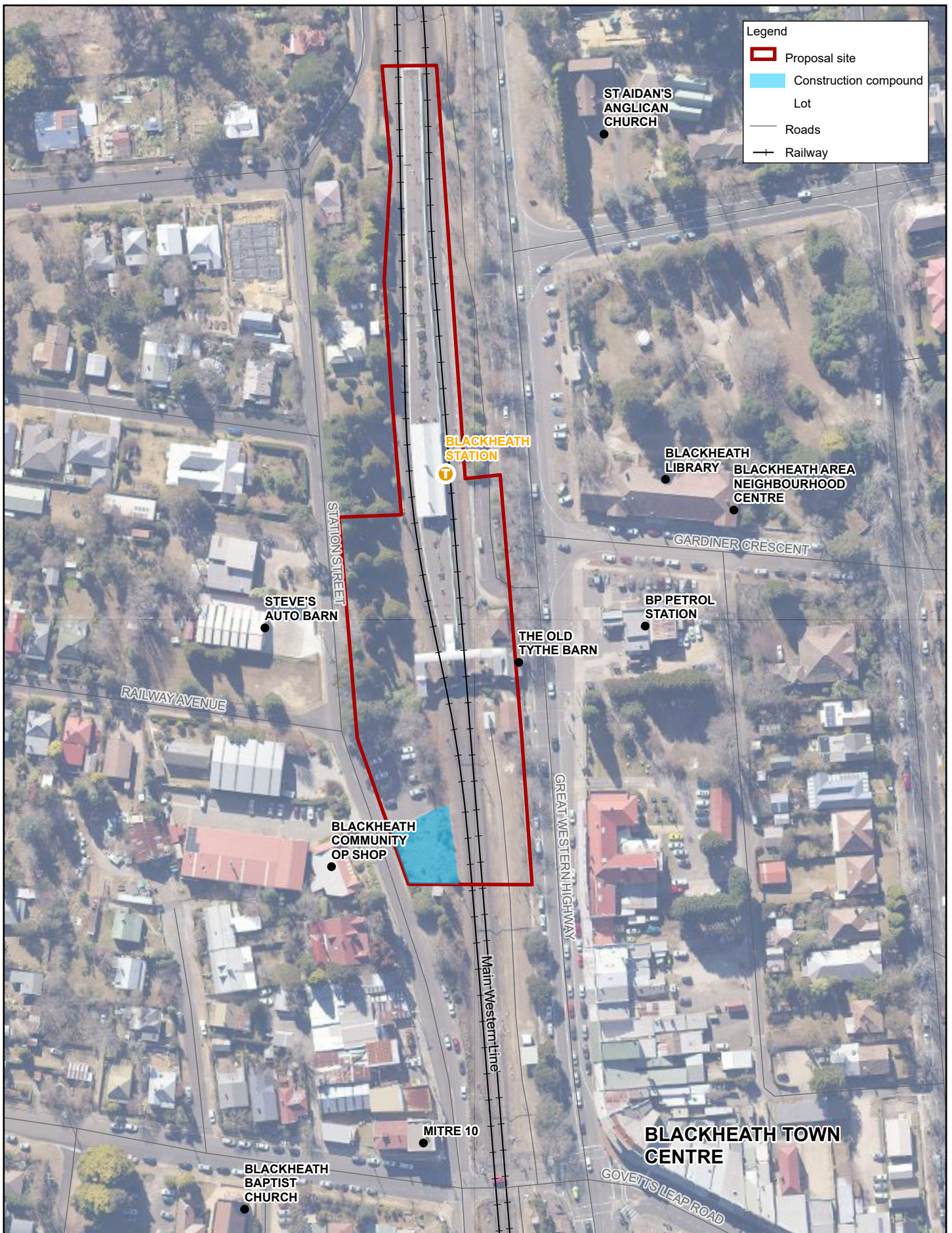
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Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56

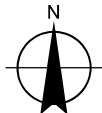
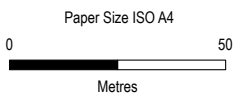
Regional context

FIGURE 1.1



Legend

- Proposal site
- Construction compound
- Lot
- Roads
- +— Railway



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Proposal site

FIGURE 1.2

2. Methodology

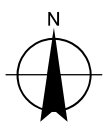
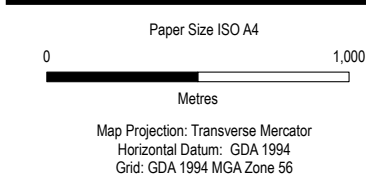
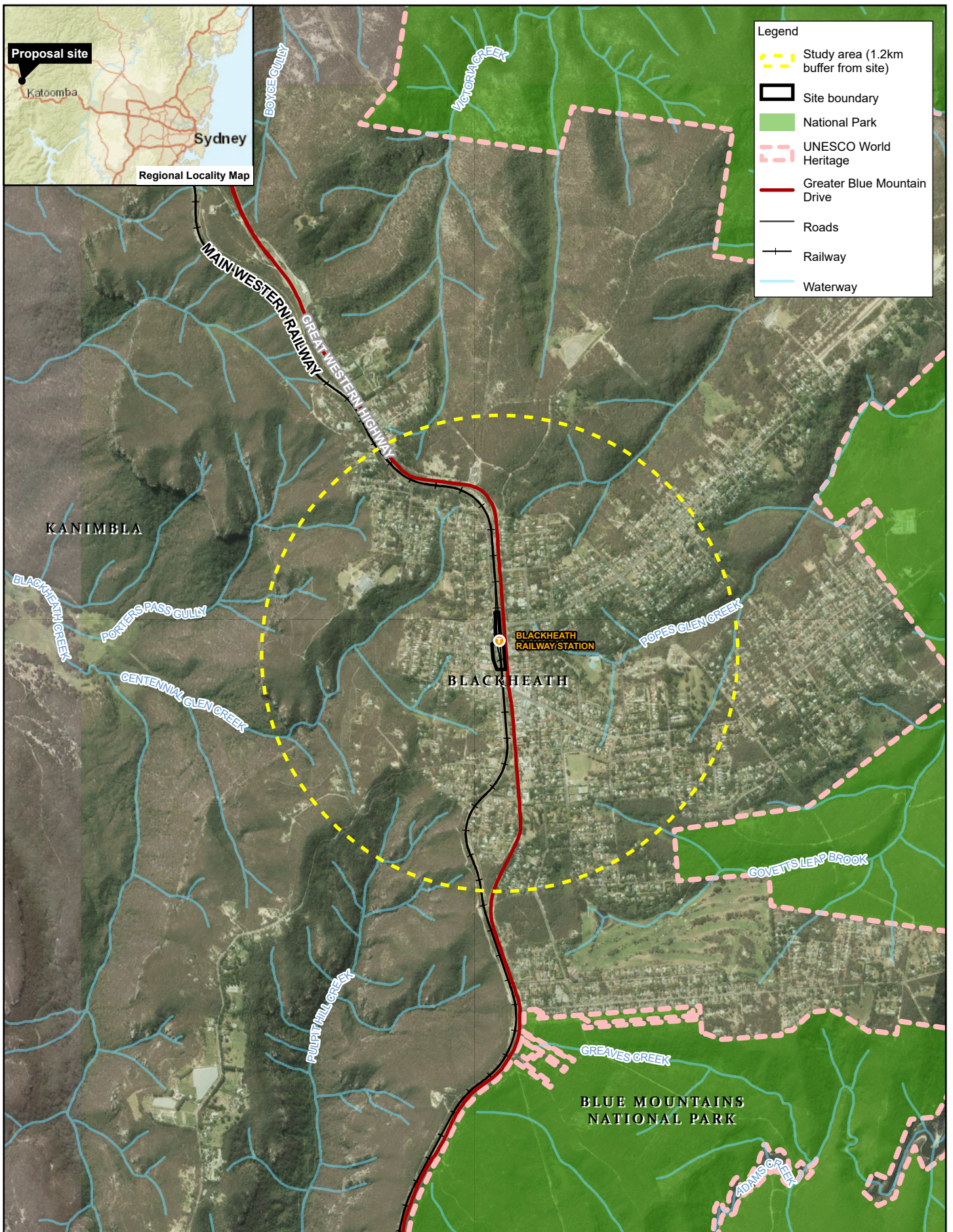
2.1 Standards and guidance

This landscape and visual impact assessment has been prepared in accordance with *Environmental impact assessment practice note EIA-N04 – Guideline for landscape character and visual impact assessment, Version 2.2* (Transport for New South Wales, 2020).

Where additional definition or guidance was required they have been sourced from *Guidelines for Landscape and Visual Impact Assessment, 3rd Edition* (Landscape Institute and Institute of Environmental Management & Assessment, 2013).

2.2 Study area

The study area is based on the Proposal description, potential visual catchment of Proposal and a review of similar assessments. The study area used for this assessment was approximately 1.2 kilometres, with a focused area of 0.5 kilometres from the proposal site. Refer to Figure 2.1 for Proposal location and study area.



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Location Plan and Study Area

FIGURE 2.1

2.3 Existing landscape and visual existing environment

2.3.1 Review of legislation and policy

A review of key planning designations, policies and guidance was undertaken in relation to landscape and visual amenity within the study area. The emphasis of the review was to identify elements outlined within legislation, policy and planning documents relevant to the landscape, visual character and identity of the study area.

2.3.2 Desktop analysis landscape and visual resources

Existing data was gathered and reviewed, including:

- proposal design information and site photographs
- topography, land use, and vegetation maps
- Google Earth and Google Street View.

Using this data, a preliminary assessment of the landscape and visual environment was undertaken to inform the site inspection.

2.3.3 Zone of theoretical visibility

Zone of theoretical visibility (ZTV) mapping is a computer-generated analysis which identifies land from which it is theoretically possible to view the components of the Proposal. These have been used primarily to guide the area of site analysis and representative viewpoint selection.

ESRI ArcGIS software was used to model the ZTV of the Proposal. A digital elevation model was produced using one metre contour intervals at a resolution of one metre. The ZTV was mapped using the following parameters:

- a viewing height of 1.7 metres, which is within the average typical viewing range of an adult
- other aspects of the Proposal used to generate ZTV, such as height and location of proposed built form.

The GIS software then digitally determines the likely extent over which the feature would be visible or not visible. In interpreting the ZTV, the following issues must be considered:

- It only takes into account the landform and does not include land cover factors such as the presence of buildings and trees, therefore it represents the worst-case scenario of potential visual impact.
- It does not take into account the effect of distance. The greater the distance from the Proposal, the lower the impact, as the development will take up a smaller portion of the view, and atmospheric conditions may reduce the visual prominence of the Proposal.
- The ZTV is only accurate to the resolution of the elevation model.

2.3.4 Site inspection

A site inspection was undertaken by a qualified Landscape Architect on 2 December 2021. The purpose of the inspection was to:

- inspect the site and appreciate views to / from sensitive visual receivers
- inspect publicly accessible locations identified in the desktop study as likely to provide views of the Proposal
- identify sensitive visual receiver locations
- assess the landscape character of the study area and identify landscape sensitivities
- undertake site photography suitable for viewpoint assessment and photomontage preparation.

The coordinates of each viewpoint were recorded during the site inspection.

2.3.5 Definition of existing landscape and visual environment

An assessment of the existing landscape and visual environment was undertaken to determine the existing natural, cultural and visual features within the study area. This includes determination of key landscape and spatial elements, features and values. Aspects considered include:

- land use and built form
- landform, topography and hydrology
- vegetation
- historical features
- key visual features
- the Proposal's viewshed and visual receivers.

2.4 Impact assessment

2.4.1 Landscape character zones

Landscape character considers common landscape zones defined by typical features and characteristics identified during the desktop assessment and site inspection. Defining landscape character zones (LCZs) identifies areas sharing the same homogenous environmental or cultural qualities or pattern such as topography, vegetation, hydrology, land use and settlement, built form scale and character, cultural and recreational characteristics.

This approach has been used to establish the existing landscape character within the study area and to provide a framework for measuring the impact of the Proposal. This assists in:

- defining landscape elements that contribute to defining character
- defining landscape character attributes
- identifying landscape value.

The assessment of the existing environment also considers factors which have influenced landscape change in the past and those that are likely to do so in the future. The landscape character zones are defined in Section 6.

Landscape value

As part of the assessment of existing conditions, the value of the landscape is defined for each LCZ. Criteria for assessing the value of the landscape is defined in Table 2.2.

When defining LCZs, the value attached to the landscape also forms the baseline for which the significance of the impact is measured. Landscape value looks at designated and undesignated landscapes, and holistically at all the elements such as the environmental, cultural, historical and visual/sensory elements that form the landscape. The value of the landscape from an international, national, local and community level is considered when applying a landscape value. The following factors are taken into consideration when defining landscape value (Natural England, Scottish Natural Heritage and Countryside Council, 2011):

- landscape quality (physical state of the landscape)
- scenic quality (appeal of the landscape to the senses)
- rarity (presence of rare elements)
- representativeness (distinct character or features of landscape)
- conservation value
- recreation value
- perceptual aspects/qualities
- associations (with particular people, artists, events in history).

The landscape values for each LCZ are described in Section 6.

Table 2.1 Landscape value

Landscape Value	Definition
High	Landscape character elements in good or above average condition and/or that make a strong positive contribution to landscape character. May include nationally important features.
Medium	Landscape character elements in reasonably good condition and/or that make an average contribution to the local character, which may include locally important landscape features.
Low	Landscape character elements in below average condition and/or that are not particularly distinctive local features.

2.4.2 Landscape character impacts

Landscape character refers to a distinct and recognisable pattern of elements that occur consistently in a particular type of landscape. Certain combinations of geology, landform, soils, vegetation, land use and human settlement create character, which makes each part of the landscape distinct and creates a particular sense of place.

Assessment of landscape impacts deals with the effect of change and development on landscape as a resource. The concern is with how the Proposal will affect the elements that make up the landscape, the aesthetic and perceptual aspects of the landscape and its distinctive character. The consideration of potential impacts on landscape character is determined based on the sensitivity of the existing landscape and the magnitude of change that is likely to occur.

The sensitivity of a landscape is judged on a combination of the landscape value (refer Table 2.1) and the landscapes susceptibility to change (refer Table 2.2) from the type of development proposed. A judgement on the level of sensitivity is made and a rating of high, moderate or low applied.

The magnitude of change to landscape character depends on the nature, scale and duration of the change expected to occur. The magnitude of change also depends on the loss, change or addition of any feature to the existing landscape. It is based on the part of the landscape character zone which is likely to be impacted to the greatest extent by the Proposal.

The sensitivity and magnitude of landscape effects address the following specific criteria:

- sensitivity of landscape to proposed change, based on the susceptibility to change, and the value of landscape (refer Table 2.2 and Table 2.1 respectively)
- magnitude of landscape effect, based on the size or scale of change, the geographical extent of effects, and the duration and reversibility of effects (refer Table 2.3).

A judgement is made on the overall level of significance of the landscape impact in relation to the existing conditions.

Table 2.2 Landscape susceptibility to change

Landscape susceptibility	Definition
High susceptibility to change	The type of development proposed could have a detrimental effect on the landscape character, condition or value. Mitigation measures are unlikely to reduce the impacts of the change.
Moderate susceptibility to change	Any change caused by the type of development would be unlikely to have a significant adverse effect on the landscape character, condition or value that could not be mitigated.
Low susceptibility to change	Development of this type is unlikely to have an adverse effect on the landscape character, condition or value. Mitigation measures would be effective in neutralising adverse effects.

Table 2.3 Magnitude of change criteria (landscape)

Rating	Criteria
High	A substantial/obvious change to the landscape character due to total loss of, or change to, elements, features or characteristics of the landscape. Would cause a landscape to be permanently changed and its quality diminished.
Moderate	Discernible changes in the landscape character due to partial loss of, or change to elements, features or characteristics of the landscape, however has potential to be partly mitigated. The change would be out of scale with the landscape character, and at odds with the local pattern and landform and would leave an adverse impact on the landscape character.
Low	Minor loss or alteration to one or more key landscape character elements, features or characteristics, or the introduction of components that may be new but may not be uncharacteristic within the existing landscape character.
Negligible	Almost imperceptible or no change in the landscape character as there is little or no loss of/or change to the elements, features or characteristics of the landscape.

2.4.3 Viewpoint selection

Assessment of visual impacts deals with the effects of change and development on the views available to people and their visual amenity. It assesses how the surroundings of individuals or groups of people may be specifically affected by changes in the context and character of views as a result of the change or loss of existing elements of the landscape and/or the introduction of new elements.

Visual receivers have been considered in terms of the views they are likely to obtain from within the study area including consideration of any key vantage points, such as lookouts, where there is particular interest in the view. Visual receivers are identified based on:

- proximity of the receivers to the Proposal, as the most affected visual receivers are anticipated to be located closest to the Proposal, unless located at an elevated vantage point
- type of receiver, as different viewer types would have different perceptions of the change.

Based on the analysis of the existing landscape and visual environment, viewpoint locations were selected for assessment as representative of sensitive visual receiver locations.

2.4.4 Visual impacts

The evaluation of potential impacts on visual amenity is based on the sensitivity of the viewpoint (and the visual receiver it represents) to change, and the magnitude of change that is likely to occur.

The sensitivity of each viewpoint is considered to be dependent on the:

- importance of the view, its existing scenic qualities and the presence of other existing man-made elements in the view
- type of visual receiver and their likely interest in the view.

The magnitude of change to views and visual amenity depends on the nature, scale and duration of the change that is expected to occur. The magnitude of a change also depends on the loss, change or addition of any feature in the field of view of the receiver including an assessment of the level to which the change contrasts with the existing view or expected view of the landscape. This includes the degree of any change to the backdrop to, or outlook from a viewpoint.

The assessment considers the likely impacts of the Proposal. The level of effects on a view depends on factors such as the extent of visibility, degree of obstruction of existing features, degree of contrast with the existing view, angle of view, duration of view and distance from the Proposal.

Steps undertaken to assess visual effects include:

- identify and map viewpoint locations
- undertake assessment of visual effects, comprising:
 - sensitivity of visual receivers to proposed change, based on: susceptibility of visual receivers to change, and value attached to views (refer Table 2.4)
 - magnitude of visual effect, based on: size or scale of change; geographical extent of effects, and duration and reversibility of effects (refer Table 2.5).

An assessment is undertaken of the overall level of significance of the visual impacts in relation to the existing view (refer to Section 2.4.5).

Table 2.4 *Sensitivity criteria (visual)*

Rating	Criteria
High	Occupiers of residential properties, at home or going to or from, with long viewing periods, within close proximity to the proposed development; Communities that place value upon the landscape and enjoyment of views of their setting.
Moderate	Outdoor workers who have a key focus on their work who may also have intermittent views of the study area; Viewers at schools, or similar, when outdoor play and recreation areas are located within close proximity but viewing periods are limited; Occupiers of residential properties with long viewing periods, at a distance from or screened from the study area.
Low	Road users in motor vehicles, trains or on transport routes that are passing through or adjacent to the study area and therefore have short term views; Viewers indoor at their place of work, schools or similar.
Negligible	Viewers from locations where there is screening by vegetation or structures where only occasional screened views are available and viewing times are short; Road users in motor vehicles, trains or on transport routes that are passing through/adjacent to the study area and have partially screened views and short viewing times.

Table 2.5 *Magnitude of change criteria (visual)*

Rating	Criteria
High	A substantial/obvious change to the existing view due to total loss of, or change to, elements, features or characteristics of the view. Would cause a view to be permanently changed and its quality diminished.
Moderate	Discernible changes in the existing view due to partial loss of, or change to elements, features or characteristics of the view, however has potential to be partly mitigated. The change would be out of scale with the existing view, and would leave an adverse impact on the view.
Low	Minor loss or alteration to one or more key view elements, features or characteristics, or the introduction of components that may be visible but may not be uncharacteristic within the existing view.
Negligible	Almost imperceptible or no change in the view as there is little or no loss of/or change to the elements, features or characteristics of the view.

2.4.5 Significance of impacts

The combination of sensitivity and magnitude determines the significance of the impact on the landscape character or representative viewpoint. Refer to Table 2.6 for the matrix used to determine the significance of impact.

Table 2.6 Significance of impact matrix

		Magnitude of impact			
		High	Moderate	Low	Negligible
Sensitivity	High	High	High-Moderate	Moderate	Negligible
	Moderate	High-Moderate	Moderate	Moderate-Low	Negligible
	Low	Moderate	Moderate-Low	Low	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

2.4.6 Panorama and photomontage

All photographic images were captured using a 50 millimetre fixed focal length lens on a 35 millimetre full frame format camera at a camera height of 1.7 metres. All photograph locations were recorded and mapped.

A series of six viewpoint locations were chosen and existing views represented using a panorama technique. This technique involves the stitching together of a number of adjoining images using the Adobe Photoshop software program.

Of the six viewpoint locations, three viewpoints were selected for the production of photomontage images to represent proposed views following the completion of the Proposal. The software used to model and render the photomontages was Autodesk 3D Studio Max. In order to achieve an accurate photomontage of the Proposal and surrounding landscape, one-metre contours with a digital terrain model to a resolution of one metre were used to model the surrounding landform.

Once the 3D model incorporating both the landscape and new Proposal elements were created, a virtual camera was placed in the software at the same location the photographs were taken. The film, focal lens and height of the virtual camera matches the real camera utilised to take the photographs. The photographs of the site were used in 3D Studio Max as a background to accurately match the 3D model with the Proposal elements to the perspective of the photographs. From the camera view, rendered images of the Proposal were produced to match the daylight exposure of the photographs. The rendered images were imported into Adobe Photoshop for post-production editing and collation of the photomontages.

The final result is the 3D model of the Proposal shown in the correct 3D location in the photographs (refer Appendix A). The final images were produced to a high resolution, suitable for printing.

2.5 Mitigation measures

Mitigation measures were developed in response to the impacts identified within Section 6 and Section 7. Potential mitigation measures may include:

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

3. Proposal description

The following section provides a summary of the proposal and includes the detail relating to the main visual components that have potential to affect the landscape character and visual amenity of the study area.

3.1 The proposal site

The Proposal is located in Blackheath, in the upper Blue Mountains, surrounded by the Blue Mountains National Park. The location of the Proposal in the regional context is shown on Figure 1.1. Blackheath Station is located on the Blue Mountains Line, within The City of Blue Mountains local government area (LGA), about 130 kilometres west of the Sydney central business district.

Blackheath village is characterised by its inter-war period architecture and garden streetscapes. It is a popular tourist location due to the local heritage and a number of lookouts providing vistas from the edge of the surrounding high plateau. The village is bisected by the Great Western Highway and the rail corridor which run parallel to each other, in a north-south direction.

The proposal site is bounded by the rail corridor, commuter car park to the west and the Great Western Highway to the east. It has pedestrian connections to the Great Western Highway to the east and Station Street to the west, via the station platform crossing and footbridge.

Several cycle routes traverse the village of Blackheath including alongside the Great Western Highway corridor.

The proposal site is located on land owned by Transport Asset Holding Entity of NSW (TAHE) and managed by NSW Trains and Sydney Trains. The station building was constructed in 1898 and is an example of a standard federation railway building, comprising a timber island platform building. The structure was partially reconstructed in 1985 after a fire. A footbridge was added in 1911 and this was upgraded with a canopy in 1990.

3.2 The Proposal

The proposal forms part of the Transport Access Program. The key features of the Proposal are summarised as follows:

- provision of three new lifts, associated landings and canopies providing access to the station platforms from Station Street and the Great Western Highway station entry area
- provision of an entry plaza from the Great Western Highway including a new ramp and new stairs from the footpath to the lift landing and existing stairs
- upgrade of the existing kiss and ride bay / taxi zone along the Great Western Highway, including regrading, line marking, installation of bike hoops, sheltered seating and an upgrade of the accessible path to the station entry
- upgrade of the accessible path from lift 2 to the station platforms
- upgrade of the accessible path from the commuter car park to lift 3, on the Station Street side
- provision of two accessible parking spaces and extension of the Station Street commuter car park and localised regrade of areas of the existing commuter car park
- provision of widened doors to the waiting room and the family accessible toilet
- upgrades to the station power supply, including provision of a new main switch board
- provision of a new accessible water bubbler on the island platform by the station building.

Figure 3.1, Figure 3.3 and Figure 3.4 show the artist's representation of the Proposal and Figure 3.2 outlines the key features of the proposal. Figure 3.5 and Figure 3.6 show the architectural plans.



Figure 3.1 Artist's representation of the Proposal from the Great Western Highway entry plaza, looking west (Indicative only, subject to detailed design)

3.2.1 Operation phase activities

The future operation and maintenance of the new station, interchange and car park facilities is subject to further discussions with NSW Trains, Sydney Trains, Transport for NSW and Blue Mountains City Council. Structures constructed under this Proposal would be operated by NSW Trains and maintained by Sydney Trains. However, it is expected that the commuter car park and Great Western Highway footpath areas would continue to be maintained by Blue Mountains City Council.

3.2.2 Construction phase activities

Subject to approval, construction is expected to commence mid-2022 and take around 12 months to complete. The construction methodology would be further developed during the detailed design of the Proposal by the nominated Contractor in consultation with Transport for NSW.

The construction activities for the Proposal are identified in Table 3.1. This staging is indicative and is based on the current concept design and may change once the detailed design is finalised. The staging is also dependent on the Contractor's preferred methodology, program and sequencing of work.

Rail possessions are track maintenance weekends that occur around three times per year, where busses replace trains, and the rail line is shut down for maintenance and construction activities to occur. Works during these weekends usually commence early on Saturday morning, and normal train services resume on Monday morning.

Table 3.1 *Indicative construction staging for key activities*

Stage	Activities
Site establishment and enabling work	<ul style="list-style-type: none"> – site investigations and survey – establishment of site compound (erect fencing, tree protection zones, site offices, amenities and plant/material storage areas) – relocation of services – installation of temporary services – installation of temporary fencing and hoarding as required – traffic control measures.
Rail possession 1	<ul style="list-style-type: none"> – decommission and removal of pedestrian level crossing – demolition of the existing ramp between the level crossing and platform – installation of hoarding from the level crossing area to the platform – piling for new lift and ramp footings – platform combined service route works (including excavation along the platform). <p>Note: the station, footbridge and commuter carpark will be closed to customers during these weekend works.</p>
Stage 1: Lift 3 and platform building works	<ul style="list-style-type: none"> – family accessible toilet and waiting room door widening works (temporary closures of each space will be required) – lift piling – lift pit excavation – concrete works to lift pit (concrete pour in situ) and waterproofing – installation of scaffold and completion of concrete works (in situ) up to footbridge level, support beams for new landing area – preassembly of lift steel structure (commuter car park spaces may be temporarily occupied).
Rail possession 2	<ul style="list-style-type: none"> – platform resurfacing (new asphalt) to half the platform area – excavation of lift pits (lifts 1 and 2) – install lift pit shoring boxes (precast concrete) – footbridge modification works to allow for lift 3 landing – installation of lift 3 steel structure (crane) – platform combined service route works – water bubbler in ground plumbing works. <p>Note: the station, footbridge and commuter carpark will be closed to customers during these works.</p>
Stage 2: Precast lift 1 and 2 components and station entry civil works	<ul style="list-style-type: none"> – installation of new platform tactiles (to the platform area that was resurfaced during Possession 2) – lift 1 and 2 detailed excavation works – lift 1 and 2 precast assembly works in car park (car park temporarily closed) – preassemble lift 1 and 2 steel structures in car park (car park temporarily closed) – lift 3 landing balustrade works incl. roofing and anti-throw screens install – lift 3 installation – civil and landscaping works to the station entry areas, (changes to pedestrian access around the station will be in place with paths sign posted) – service works in platform and station entries as required (drainage, LV, CCTV, Lighting etc.).
Rail possession period 3	<p>Platform works:</p> <ul style="list-style-type: none"> – changes to platform hoardings – platform resurfacing works (to the remaining half of the platform) – crane setup for precast and structural steel lifts (Station Street car park temporarily closed) – install new ramp (between lift and platform) precast slabs, steelworks, balustrades and anti-throw screens – erection of all lift 1 and 2 precast sections and steel components – lift 1 and 2 roofing works – bridge modification works to allow for new lift landings

Stage	Activities
	<ul style="list-style-type: none"> – bridge stair nosing and handrail modification works – civil works to station entries (final stage) – installation supply main switch board and padmount modification works, and services commissioning works.
Stage 3	<ul style="list-style-type: none"> – complete platform ramp works – install platform tactiles (to the platform area that was resurfaced during Possession 3) – install wayfinding signage site-wide – lifts 1 & 2 installation – install new accessible water bubbler – relocate platform furniture – installation supply main switch board containment – Station Street car park line marking works.
Demobilisation	<ul style="list-style-type: none"> – install ancillary features and landscaping – removal of footpath/pedestrian management and traffic controls – removal of construction fencing/hoarding and environmental control measures – removal of temporary site facilities – asphalt and line marking works to extend the Station Street car park – completion of site clean-up and tidying works.

Vegetation removal

The Proposal would result in the removal of up to three introduced trees and 18 shrubs (Tree Survey, 2021). There are three main areas where shrub and small tree removal is proposed: the station forecourt area; the car park extension / compound area; and the area around the western lift shaft.

The concept design plans and arborists report suggest vegetation removal is typically limited to smaller trees, small to medium sized shrubs and weed species.

It is proposed that the large trees with mature canopies will be avoided and protected, if possible. As the mature large canopy trees provide the majority of the visual screening around the station area, it is assumed that the proposed vegetation removal will not have a significant impact to the views from the viewpoints assessed within this report.

Site compound

A construction compound will be established on the eastern side of Station Street to the south of the existing commuter car park. The temporary construction compound will be fenced to maintain public safety and would accommodate a site office, amenities, laydown, and storage area for materials. The proposed location is shown in Figure 3.2.

Following completion of construction, the compound site would become the carpark extension.

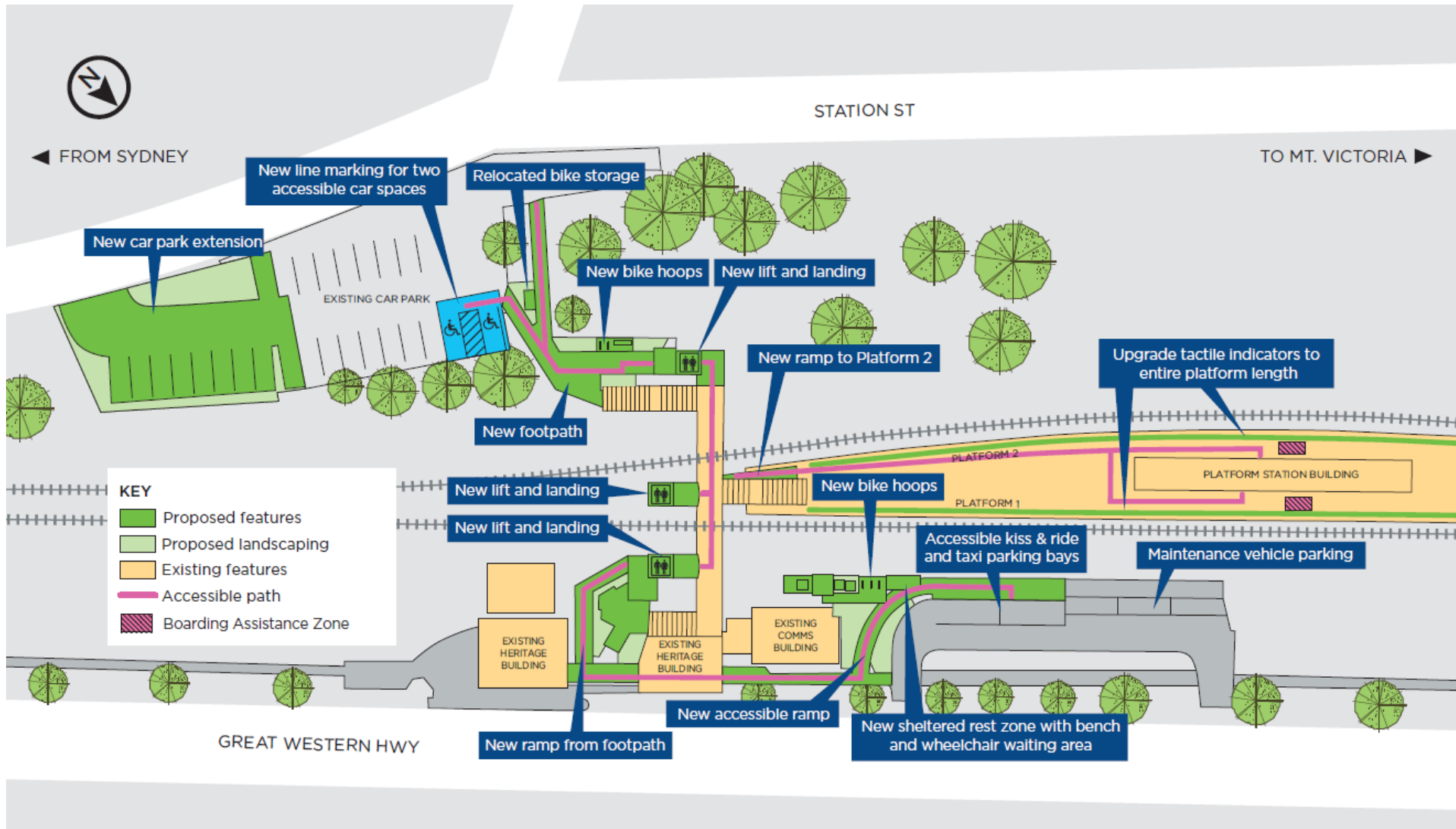


Figure 3.2 Key features of the Proposal



Figure 3.3 Artist's representation of the Proposal from an elevated perspective, looking north-east (Indicative only, subject to detailed design)



Figure 3.4 Artist's representation of the Proposal looking north from the platform, (Indicative only, subject to detailed design)

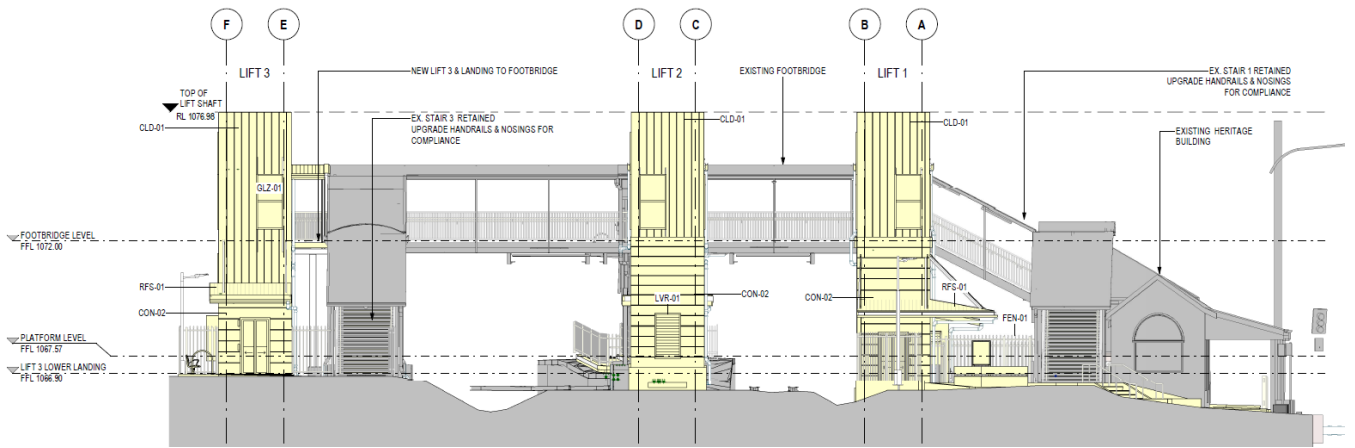


Figure 3.5 South-east elevation of the Proposal, extracts from Arenco DesignInc Architectural Drawings, February 2022

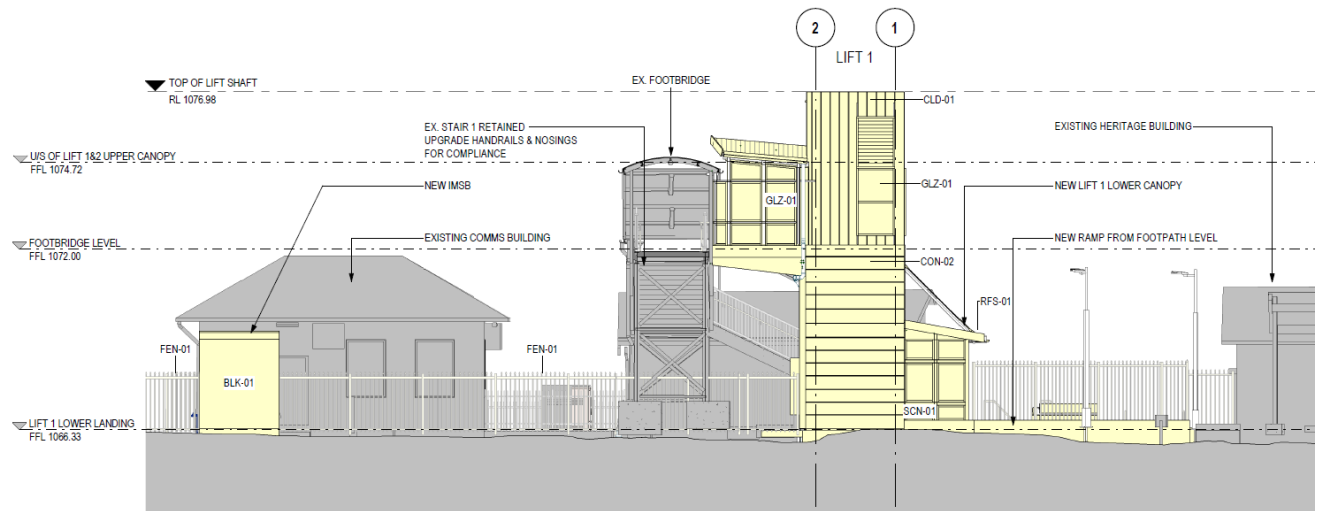


Figure 3.6 Platform long section, extracts from Arenco DesignInc General Arrangement Architectural Drawings, February 2022

4. Legislation and policy

The following section provides an overview of relevant legislation and policy objectives relevant to landscape and visual considerations within the study area.

4.1 International and National legislation and framework

Land use planning, including zoning and development control, is governed primarily by local environmental plans (LEPs) made under the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). LEPs include lists of local heritage items and local heritage precincts and provide controls on development which may affect those items or be located in those precincts. The study area for the project is within the Blue Mountains City Council local government area. The relevant LEP for the local government area was reviewed for the purpose of preparing this report. Figure 4.1 shows the land use zoning within the study area in accordance with the relevant LEP.

4.1.1 UNESCO World Heritage Area

The Greater Blue Mountains Area UNESCO World Heritage Site was accepted onto the World Heritage List in 2000. It was listed for its representation of Australia's unique and characteristic eucalypt vegetation and is one of 17 World Heritage sites in Australia (851 in the world).

It covers more than 1.03 million hectares of sandstone plateau, escarpments and gorges dominated by temperate eucalypt forest. It is made up of eight adjoining conservation reserves – Jenolan Karst Conservation Reserve and Yengo, Wollemi, Gardens of Stone, Blue Mountains, Kanangra-Boyd, Nattai and Thirlmere Lakes National Parks.

UNESCO World Heritage Sites are places listed as having significance either culturally or physically.

The Greater Blue Mountains Area is noted for its representation of the evolutionary adaptation and diversification of the eucalypts in post-Gondwana isolation on the Australian continent. The area provides significant representation of Australia's biodiversity with significant numbers of rare or threatened species, including endemic and evolutionary relict species, such as the Wollemi pine, which have persisted in highly-restricted microsites.

The proposal site is located about 1.2 kilometres from the boundary to the Blue Mountains National Park and World Heritage Site.

4.1.2 National Parks and Wildlife Act 1974

The Blue Mountains National Park boundary falls one kilometre to the east of the proposal site. The *National Parks and Wildlife Act 1974* relates to the preservation of national parks and other areas, as well as the protection of certain Aboriginal objects. Such legislation includes:

- *the purpose of reserving land as a national park is to identify, protect and conserve areas containing outstanding or representative ecosystems, natural or cultural features or landscapes or phenomena that provide opportunities for public appreciation and inspiration and sustainable visitor or tourist use and enjoyment so as to enable those areas to be managed in accordance with subsection*
- *the conservation of biodiversity, the maintenance of ecosystem function, the protection of geological and geomorphological features and natural phenomena and the maintenance of natural landscapes*
- *the conservation of places, objects, features and landscapes of cultural value*

4.2 State legislation and framework

4.2.1 Urban Design Best Practice Guidelines

The *Urban Design Best Practice Guidelines: Urban design for heavy and light rail (TfNSW, 2016)* is part of a wider suite of guidelines for the design of rail infrastructure and the precincts around them. It sets out a series of key urban design objectives and principles to drive integrated outcomes.

The principles related to landscape and visual impact are:

- integrate the Proposal with the surrounding area
- maximise the amenity of the public domain
- protect and enhance heritage features and significant trees
- maximise positive view opportunities
- design transport solution which enhances and contributes to local amenity and prosperity.

4.2.2 Draft Design and Place State Environmental Planning Policy

The proposed Design and Place State Environmental Planning Policy (NSW Government, 2021) aims to positively influence new development through quality design and place-led design approaches. In doing so, this SEPP supports the design of healthy and prosperous places that support the wellbeing of people, community and country.

The core principles related to landscape and visual impact are:

- designing places with character that are visually attractive, physically comfortable and make a positive contribution to their context.
- projects should also respond to the community's needs and encourage pride and ownership.
- design sustainable and green places which contribute to the wellbeing of communities and the environment.

4.2.3 Local Character and Place Guideline 2019

The *Local Character and Place Guideline* (NSW Government, 2019) seeks to ensure local character is considered in decision making, and the identity and place attributes that make an area distinctive are maintained, enhanced and cultivated. The guideline recognises that places are multi-layered and diverse, and that there are a number of influences that contribute to, and impact local character.

The guideline stipulates that a local character statement should be prepared for different areas, to provide a reference for development proposals and decision making. This assessment outlines the landscape and visual elements that contribute to local character, potential impact of the Proposal and mitigation measures to manage these impacts. The approach in this assessment is consistent with the *Local Character and Place Guidelines assessment toolkit*.

4.2.4 Better Placed

Better Placed is a design guide developed by the Government Architect NSW, recognising the importance of good design to make better places and enhance urban environments across the state. The design guide addresses design process, roles and responsibilities and desired outcomes (Government Architect NSW, 2017).

The relevant design principles within this guide include:

- **Better fit:** place-based response informed by and derived by its location, context and resonant with local character and heritage.
- **Better look and feel:** encouraging places which are welcoming and aesthetically pleasing, and design which contributes to the visual environment.

This guide prioritises visual amenity and local character. While of greater relevance to the Proposal design, it has also informed the mitigation measures identified in this LVIA assessment.

4.2.5 Greater Blue Mountains Tourist Drive

The Greater Blue Mountains Drive is 1200 kilometres of sealed road which links Blackheath to Glenbrook, Wentworth Falls, Katoomba and beyond. It takes in the iconic scenery of the Greater Blue Mountains World Heritage Area. Within the Proposal Study area, the tourist drive is on the Great Western Highway and is adjacent to the proposal site.

Although there is no designated state legislation surrounding the drive, it is a frequented tourist attraction for individuals who wish to experience the scenic landscapes and villages of the Blue Mountains.

4.3 Local legislation and policy

The wider Blackheath area falls between two local government areas (LGA's), the City of Blue Mountains and the City of Lithgow.

The 1.2 kilometre study area only falls within The City of Blue Mountains LGA, therefore the *Blue Mountains Local Environmental Plan 2015* (Blue Mountains LEP) applies.

4.3.1 Blue Mountains Local Environmental Plan 2015

Relevant aims of the Blackheath Precinct within the Blue Mountains LEP include:

- to maintain the unique identity and values of the “City within a World Heritage National Park”
- to identify and retain the diverse built and landscape elements that contribute to the character and image of the Blue Mountains
- to maintain the established village character and modest scale of existing development
- to encourage building forms and designs that are consistent or compatible with the scale and architectural character of existing buildings constructed during the early 20th century
- to control building heights in order to protect the character of existing heritage-listed buildings and to follow the line of hillside topography
- to ensure that established historic gardens are retained and landscape settings are re-established as part of any development of land, including development involving major alterations and additions”
- to minimise and mitigate the impact of development as viewed from any public place, including the adjoining public reserve to the north of the land.

Escarpment Protected Area (Scenic Protected Land)

Escarpmnts are characterised by steep sloping land or cliffs that form as a result of faulting or erosion – separating two relatively level by having different elevations.

The Escarpment Protected Area that has been identified in the Blue Mountains LEP where protection and enhancement of the natural, visual, environmental and heritage qualities is required. Within the study area the Escarpment protected land is 450 metres to the west of the proposal site, west of Minyago Road and Gordon Avenue and it follows the top of the hill slope above the cliff on the western periphery of the village plateau. There are also small areas to the east of the station, around the edge of the plateau / crest of the hillslope, along Evans Lookout Road and near Govetts Leap Road.

Escarpment Protected Land around Blackheath can typically be viewed from scenic lookouts along the escarpment such as Fort Rock, which offers panoramic views over the Megalong Valley, along the clifftops and across to Blackheath plateau. It is therefore protected from inappropriate development.

The Blue Mountains LEP includes escarpment protected area under ‘additional local provisions’ and development is restricted to protect:

- to preserve and enhance the visual, cultural, and ecological values of the escarpment systems in the Blue Mountains
- to restrict development, including buildings, alterations and vegetation clearing, so as to minimise any adverse impact on the perception of escarpments as significant natural features.

Development consent must not be granted to development on land to which this clause applies that requires the clearing of native vegetation unless the consent authority is satisfied that:

- the development will not have any adverse impact on the ecological or scenic values of the escarpment system
- no part of the development will protrude above any adjacent buildings or the existing vegetation canopy surrounding the site area
- the development will not visually disrupt the skyline by protruding above the ridgeline within or behind the site
- the development will use unobtrusive and non-reflective materials to blend structures into the natural environment.

Land zoning

Refer to Figure 4.1 for land zoning within the study area. The direct proposal site where permanent works are planned is zoned as SP2 – Infrastructure.

The following zones have specific aims relevant to landscape and visual amenity:

- **B2 – Local Centre:** To promote high quality urban design of built forms. To promote the unique character of each of the towns and villages of the Blue Mountains.
- **C1 – Nature Parks and Nature Reserves:** To identify land that is to be reserved under the National Parks and Wildlife Act 1974 and to protect the environmental significance of that land.
- **C2 – Environmental Conservation:** to protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values.
- **C3 – Environmental Management:** To protect, manage and restore areas with special ecological, scientific, cultural or aesthetic values, To provide for a limited range of development that does not have an adverse effect on those values, To protect the natural bushland buffer between towns, to avoid ribbon development and to conserve vistas of bushland obtained from public places and the Blue Mountains National Park' and To ensure that the form and siting of buildings, colours, landscaping and building materials are appropriate for, and harmonise with, the bushland character of the area
- **C4 – Environmental Living:** to ensure that the form and siting of buildings, colours, landscaping and building materials are appropriate for, and harmonise with, the bushland character of the area
- **IN1 – General Industrial:** To ensure that industrial development incorporates measures to mitigate operational impacts from noise generation or pollution on the sensitive environment of the Blue Mountains
- **R1 – General Residential:** To ensure that building form and design does not unreasonably detract from the amenity of adjacent residents or the existing quality of the environment due to its scale, height, bulk or operation and To enhance the traditional streetscape character and gardens that contribute to the attraction of the area for residents and visitors
- **R2 – Low Density Residential:** To ensure that development maintains and improves the character of residential areas in a manner that minimises impacts on existing amenity and environmental quality. To allow a range of non-residential land uses that are consistent with the predominant scale and height of adjoining buildings and do not unreasonably detract from the amenity of adjacent residents.
- **R3 – Medium Level Residential:** To ensure that residential development contributes to the streetscape and has a scale and character that is consistent with adjoining residential land uses and minimises any adverse impact on the amenity of residents
- **RE1 – Public Recreation:** To enhance the quality of life of residents and visitors and improve the amenity of the villages in the Blue Mountains through the provision and management of open space.
- **RE2 – Private Recreation:** To protect and enhance the natural environment for recreational purposes
- **RU2 – Rural Landscape:** To maintain the rural landscape character of the land
- **SP2 – Infrastructure:** To prevent development that is not compatible with or that may detract from the provision of infrastructure.

Height of building limits (for future development)

The Blue Mountains LEP includes limitations to the height of buildings within the study area. Objectives of building height limitations include:

- to ensure that the bulk of development is not excessive and relates well to the local context
- to protect privacy and the use of private open space in new development or on adjoining land
- to nominate heights that will provide a transition in built form and land use intensity
- to ensure an appropriate height transition between new buildings and heritage items.

Twelve metres is the maximum height of buildings in Blackheath. This is in the General Industrial area on Station Street, immediately west of the proposal site.

All other areas within the village centre are typically eight or less metres, except the village centre's main shopping area along Western Highway and Govetts Leap Road which is nine metres.

Areas at the periphery of the village typically have an eight-metre height limit with areas on the edge of the plateau which coincide with 'Scenic Protected Land' with 5.5 metres limits.

Immediately adjacent to the proposal site, height limits are 12 metres to the west and 8-9 metres to the east.

It should be noted that the above demonstrates height limits for future development and existing height limits are often significantly less.

Blackheath village precincts

A number of Village Precincts have been defined within Blackheath with objectives outlined in the Blue Mountains LEP to guide their urban and built form character. Village Precincts in close proximity to the proposal site include:

- Blackheath Precinct B2-BH03 – is located to the east of the proposal site and includes the service station
- Blackheath Precinct B2-BH01 – to the south-east of the proposal site and includes Gardners Inn Hotel and shops and buildings to the south along Great Western Highway and the junction with Govetts Leap Road.

Heritage conservation

A number of items with heritage conservation protections are present within the study area. These include the following:

- BH029 Blackheath Railway Station Group has state heritage significance
- BH034 Site of Blackheath Stockade has local heritage significance
- BH171 Blackheath Community Centre and interiors located at 265 Great Western Highway
- BH173 Shops adjacent to the station have local heritage significance
- BH174 Rotary Directory located at Great Western Highway/Govetts Leap Road.

4.3.2 Blue Mountains Development Control Plan 2015 (amended 2021)

The study area is also subject to the Blue Mountains Development Control Plan 2015. This plan supports the Blue Mountains LEP whilst providing additional objectives and development controls. Of relevance is Part D: Development in the vicinity of heritage items or conservation areas and Part E8: Public Domain: heritage management and the protection of heritage listed items is due to their significance and ability to extend beyond the lot boundaries, particularly where an item has a wide visibility or a particular view corridor. Within Part D, Development in the vicinity of heritage items or conservation areas, there is mention of potential for impacts upon heritage properties through construction works on adjoining sites, including vibration, excavation and destabilisation. There is an intent to retain and protect significant views, settings and structural stability of items.

General objectives identified include:

- to ensure that new work is designed and sited to avoid adverse impacts upon the heritage significance of heritage items and heritage conservation areas and their settings
- to encourage and provide for the continuation of original uses where practicable

- to provide for compatible and sympathetic uses that minimise adverse impacts
- to encourage the removal of inappropriate or uncharacteristic structures or elements
- to conserve significant views and vistas, including immediate street views, district views and distant views to, from and within significant items and streetscapes.

Greater Blue Mountains Drive

The Greater Blue Mountains Drive is recognised as a journey through a World Heritage landmark. It functions as a major route through the Blue Mountains that has developed multiple layers of character and heritage. Within Part E8, Public Domain, it is acknowledged that the linear configuration of the drive connects towns and villages with increases in elevation from 60 metres to 1000 metres above sea level, such villages are integral to the character and identity of the local government area.

The desired character includes:

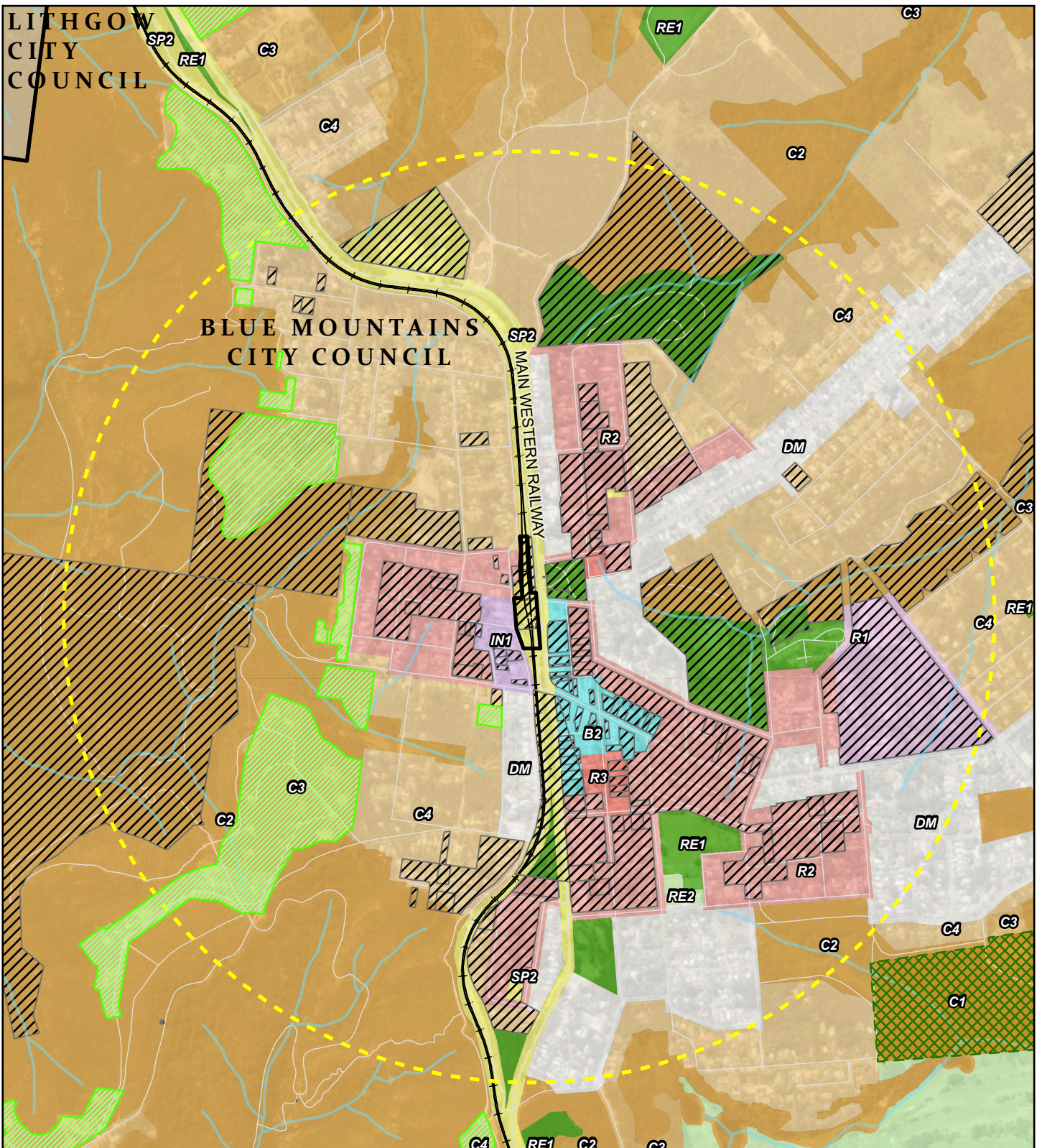
- to ensure the Great Western Highway retains its historic associations, physical remnants and landscape elements that contribute to its streetscape
- to considerately integrate new development into the historic environment
- to consider the potential impacts upon the scenic and character values of the location
- to ensure that associated infrastructure is appropriate to its setting.

4.4 Other relevant policy

4.4.1 Blackheath Village Centre Public Domain Masterplan

The Blackheath Village Centre Public Domain Masterplan includes a masterplan and urban design strategy for the Blackheath Village, including guidance for materiality, artwork, signage, and planting. The masterplan includes:

- a key overarching objective of the plan is to 'enrich the identity of the village centre to better reflect the village's history and character
- importance of heritage areas through the highlight of 'a strong visual relationship between the traditional rail station and the village centre.



Legend		
Study area (1.2km buffer from site)	Site boundary	Railway
Roads	Local Government Area	UNESCO World Heritage and National Park
Scenic Protection Land	LEP Heritage areas	B2, Local Centre
	C1, National Parks and Nature Reserves	R1, General Residential
	C2, Environmental Conservation	R2, Low Density Residential
	C3, Environmental Management	R3, Medium Density Residential
	C4, Environmental Living	RE1, Public Recreation
	DM, Deferred Matter	RE2, Private Recreation
	IN1, General Industrial	RU2
		SP2, Infrastructure

<p>Paper Size ISO A4</p> <p>0 500 Metres</p> <p>Map Projection: Transverse Mercator Horizontal Datum: GDA 1994 Grid: GDA 1994 MGA Zone 56</p>			<p>Transport for NSW Blackheath Station Upgrade Landscaping and Visual Impact Assessment</p>	<p>Project No. 12562533 Revision No. 0 Date 23/02/2022</p>
			<p>Land Use and Heritage</p>	<p>FIGURE 4.1</p>

5. Existing landscape and visual environment

The following section provides a summary of the existing landscape and visual environment of the study area.

5.1 Land use and built form

Blackheath is one of several small upper Blue Mountains villages developed on a ridgeline and surrounded by the Blue Mountains National Park. Blackheath was established in 1831 as a resting place for travellers crossing the Blue Mountains and has grown to a population of about 4500. The village and the wider Blue Mountains National Park area is a popular tourist and visitor destination, and The Greater Blue Mountains Drive functions as a major route through the Blue Mountains and is recognised as a journey through a World Heritage landmark.

Blackheath village is bisected by the Great Western Highway and the rail corridor. The centre is characterised by a number of heritage station structures and buildings, Victorian-era and unique inter-war period architecture and building heights typically do not exceed eight meters.

A local shopping strip is present along the eastern side of the Great Western Highway with facilities such as a community centre, a supermarket, antique shops, cafes, and restaurants. Extensive residential areas surround the centre and are typically constrained by forested steep terrain, rocky escarpments and the Blue Mountains National Park. Dwellings are typically old one story detached houses with angled roofs (to accommodate the snowy mountainous climate) with a retail strip of typically two-story-high facades with canopies.

The surrounding landscape include mountainous ranges, rocky outcrops and escarpments, caves and waterfalls. Many of these natural attractions are popular tourist attractions (including Govetts Leap, Evans Lookout and Perrys Lookdown) can be accessed by walking tracks which typically connect to adjoining villages.

Roads and built form tend to follow the high points of the terrain, with buildings sited in valleys, peaks, or sloping terrain around the central train station area.

Key features of Blackheath are associated with a heritage settlement surrounded by a unique natural setting of gardens and a forested national park. Other community facilities include Blackheath Memorial Park, Blackheath Pool, and Blackheath Glen Tourist Park, as well as the Campbell Rhododendron Gardens, and other municipal parks and playgrounds.

Blackheath is predominantly environmental land (zoned as environmental conservation, environmental living and environmental management) with commercial activities in the centre, surrounded by low density residential.

5.2 Topography and hydrology

The Blue Mountains are part of the Great Dividing Range and form the western edge of the Sydney Basin. The topography consists of an uplifted plateau with layers of sedimentary rock, resulting scenic gorges, deep valleys, escarpments, caves and cliffs.

Blackheath Station is located at an altitude of around 1,065 metres making it the highest station on the western highway line. The village is situated high on a ridgeline, with the settlement on a plateau, surrounded by steep and undulating terrain to the north and south. The rail corridor follows the top a major ridgeline, with smaller ridges extending beyond to the east and west and the landform drops away relatively quickly on both sides of the rail line, with steep gullies formed along drainage lines.

Govetts Leap is a long sandstone cliff top located 2.5 kilometres north-east of Blackheath Station. Govetts Leap Lookout and Evans Lookout are popular tourist destinations, where sandstone escarpments and sheer cliff walls can be accessed, affording wide panoramic scenic views down over deep canyons, undulating forests and tall waterfalls of the Grose Valley.

Centennial Pass and Porter Pass are long sandstone cliffs located one kilometre west of Blackheath Station. Blackheath Lookout and Hargraves Lookout offer expansive and panoramic views down over the Megalong and Kanimbla Valleys.

A number of natural springs and drainage lines in the study area flow into Centennial Glen Creek, Pulpit Hill Creek and Popes Glen Creek.

Refer Figure 5.1 for topography and hydrology within the study area.

5.3 Vegetation

The climate of Blackheath is generally cool, with mild to warm summers and cool dry winters, with occasional snowfall.

Natural vegetation communities of the Blue Mountains vary with landform and elevation, with Eucalypt forest to the higher ridges, heath vegetation to cliffs, and temperate rainforests and hanging swamps to sheltered gorges. The diversity of species is well known, with many plants not found anywhere else in the world.

The cooler climate of this mountain village provides conditions for a variety of exotic vegetation with autumnal colour and seasonal floral displays. Like other villages in the Blue Mountains, urban vegetation tends to compliment the heritage values of the village. Deciduous trees, decorative and exotic flowering plants and shrubs are common in domestic gardens and parkland landscapes, such as the Campbell Rhododendron Gardens and provide a unique landscape character to the village which contrasts significantly with the landscape character of the native forests of the National Park.

Roadway vegetation typically consists of tall, mature eucalypts and varying deciduous trees scattered within the urban and forested areas, as well as a mix of dominant exotic pine species. The linear green space along the railway corridor together with the street trees provides a visually prominent green edge to the eastern side of the highway.

On the eastern edge of the study area, vegetation is typically a moist tall open forest community predominately comprised of Sydney Blue Gum, Blackbutt, Forest Oak and Sydney Red Gum, with Species adapted to moist habitat such as Lilly Pilly, Sandpaper Fig, Rainbow Fern and Common Maidenhair.

On the western edge of the study area, vegetation is typically a dry open forest of Sydney peppermint, smooth-barked apple, grey gum, broad-leaved ironbark and rough-barked apple. Moist aspects have tall open forest of round-leaved gum, turpentine, Sydney blue gum, blue-leaved stringybark, thin-leaved stringybark and narrow-leaved ironbark. Coachwood and sassafras are found within the gullies.

5.4 Mitchell landscapes

The village of Blackheath and surrounding study area falls between are two identified Mitchell Landscapes, as illustrated in Figure 5.2 and described below:

– Sydney Basin Western Escarpment SB Escarpment (Swe)

Steep dissected slopes on the western margin of the Triassic rocks and descending into the Permian conglomerate, shale and sandstone. Cliffs and gorges to 100m, general elevation 250 to 1000m, local relief 150m. Brown loamy sands in rubbly soil on debris slopes, with deeper accumulations toward the valley floor. Dry aspects; open forest of Sydney peppermint (*Eucalyptus piperita*), smooth-barked apple (*Angophora costata*), grey gum (*Eucalyptus punctata*), broad-leaved ironbark (*Eucalyptus fibrosa ssp. fibrosa*) and rough-barked apple (*Angophora floribunda*). Moist aspects; tall open forest of round-leaved gum (*Eucalyptus deanei*), turpentine (*Syncarpia glomulifera*), Sydney blue gum (*Eucalyptus saligna*), blueleaved stringybark (*Eucalyptus agglomerata*), thin-leaved stringybark (*Eucalyptus eugenioides*) and narrow-leaved ironbark (*Eucalyptus crebra*). Coachwood (*Ceratopetalum apetalum*) and sassafras (*Doryphora sassafras*) in the gullies.

– Sydney Basin Wollemi Blue Mountains Plateau (Bmp)

Elevated, dissected plateau of Triassic quartz sandstones. Largely undeformed with prominent sub-horizontal bedding defining a plateau that rises to the west with maximum elevation of 1100m and local relief in cliffed gorges up to 500m. Very strong joint control on stream patterns and cliff lines. Thin shale beds form stepped topography and deeply weathered sandstones form pagoda towers and turrets on gorge margins. Exposed high slopes with dwarf casuarina (*Allocasuarina nana*) heath, Blue Mountains ash (*Eucalyptus oreades*) and

silvertop ash (*Eucalyptus sieberi*) woodlands, and perched swamps. Elsewhere heaths, woodlands and forests with very high plant diversity on sandy soils (Mitchell, 2011).

5.5 Indigenous cultural values

The Greater Blue Mountains World Heritage Area has been inhabited by Aboriginal people for at least 12,000 years and there are 700 known places of Aboriginal significance with the World heritage area, and many others yet to be recorded.

Six distinct tribal groups hold the traditional rights and custodial responsibilities for Blackheath region. They are: the Darug, the Gandangurra, the Wanaruah, the Wiradjuri, the Tharawal and the Darkinjung. Aboriginal Australians must have travelled through and sometimes occupied, parts of the Blackheath area (DesignInc, 2021).

5.6 Key visual features

The key visual features in the study area include:

- avenues of mature street trees along Great Western Highway and the rail corridor
- taller facades and unique or heritage architectural styles of the retail strip
- long views across green undulating terrain and mature tree canopies
- the “scenic qualities” of the heritage railway landscape.

The S170 Statement of Significance for the Blackheath Railway Station Group states:

“Blackheath Railway Station is of state significance as part of the early construction phase of railway line duplication on the upper Blue Mountains, demonstrating the technological and engineering achievements in railway construction at the end of the 19th century.

The building is significant for its contribution to the scenic qualities of the Blue Mountains railway landscape, forming part of a cohesive group of intact stations along the line. The platform building at Blackheath Station is an excellent representative example of a standard Federation era railway building and is one of only two timber railway buildings along the Blue Mountains line.”

5.7 Proposal viewshed and sensitive visual receivers

Key views are typically achieved from elevated locations within the study area. Of particular note are the following:

- local views across Blackheath from the Blackheath Station footbridge
- local views along Great Western Highway and the village centre
- likely private views from residential and commercial properties located near the station.

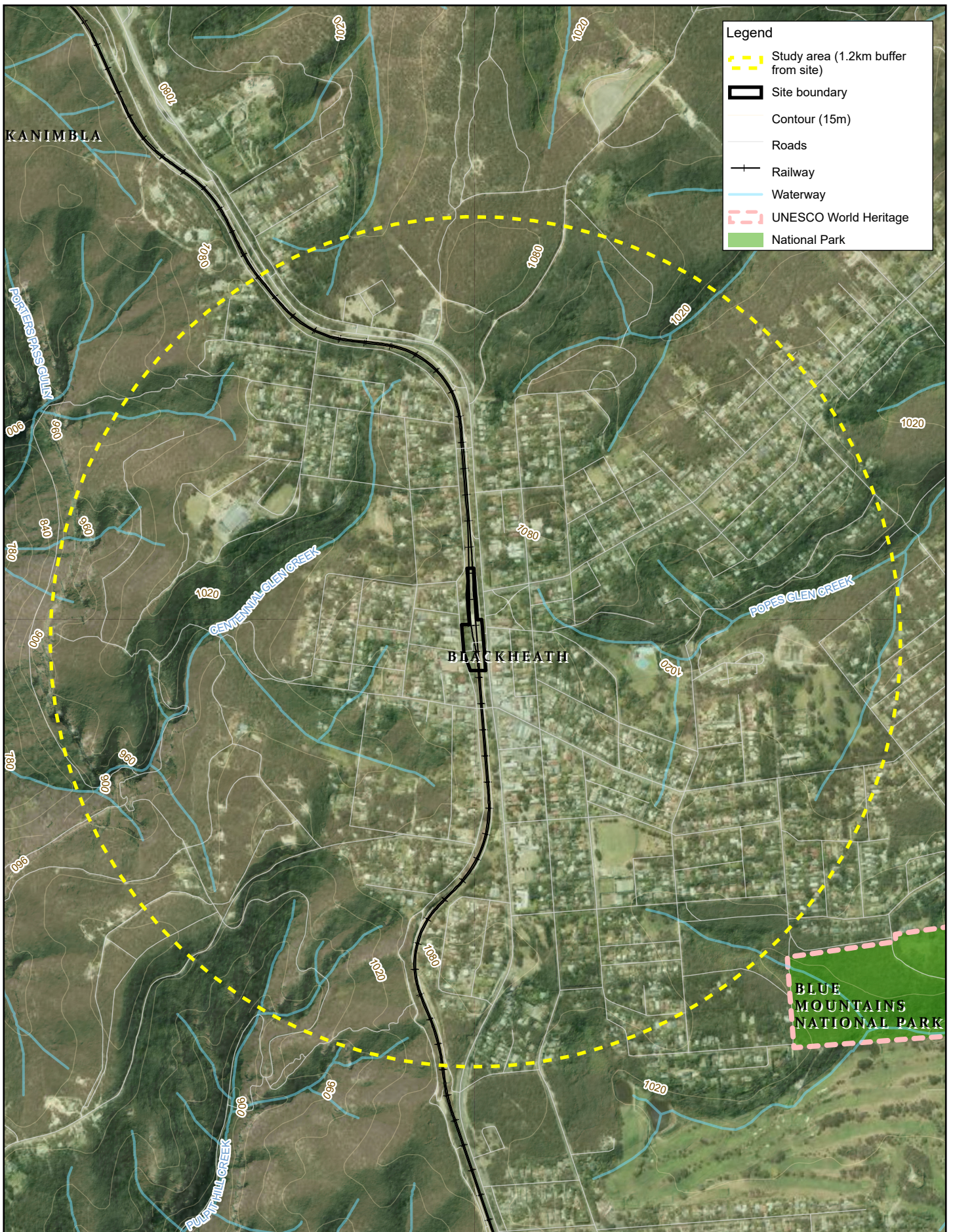
Blackheath has an enclosed character due to the dominance of mature trees and other vegetation. Visually prominent features within the study area include:

- the mature avenue of trees along the highway and rail corridor
- the Blackheath Station footbridge, particularly when viewed from the station platforms and eastern side of the rail line at the station entrance
- the visually distinctive Gardner’s Inn building and adjacent retained facades.

Also of note are the cottage style dwellings associated with Blackheath along the Great Western Highway

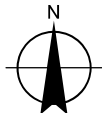
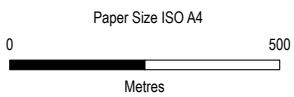
Despite the area having spectacular views along the Megalong Valley and Grose Gorge, due to the location of Blackheath along a high ridge and with the visual enclosure of the surrounding settlement, there are no significant views towards the mountains or valleys from the station precinct and village centre.

Figure 5.3 illustrates the zone of theoretical visibility mapping of the Proposal showing areas of theoretical visibility. The site inspection confirmed that the presence of large mature trees, particularly exotics, combined with built form elements such as houses, shield the majority of views towards the Proposal from the surrounding area.



Legend

- Study area (1.2km buffer from site)
- Site boundary
- Contour (15m)
- Roads
- Railway
- Waterway
- UNESCO World Heritage
- National Park



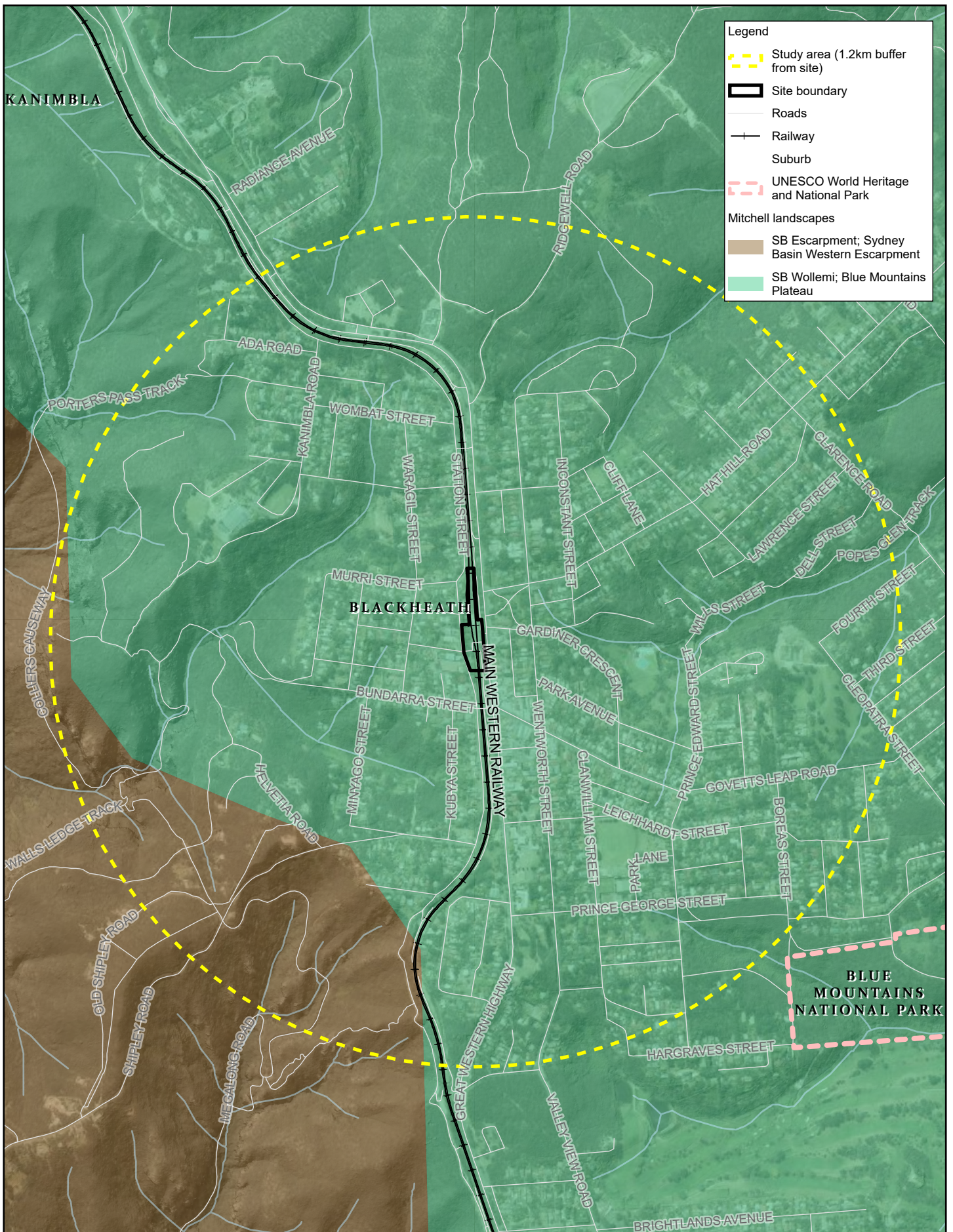
Transport NSW
Blackheath Station Upgrade
 Landscape and Visual Impact Assessment

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Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56

Topography and hydrology

FIGURE 5.1

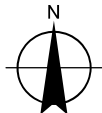
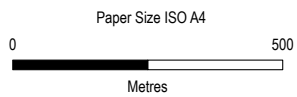


Legend

- Study area (1.2km buffer from site)
- Site boundary
- Roads
- Railway
- Suburb
- UNESCO World Heritage and National Park

Mitchell landscapes

- SB Escarpment; Sydney Basin Western Escarpment
- SB Wollemi; Blue Mountains Plateau



Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

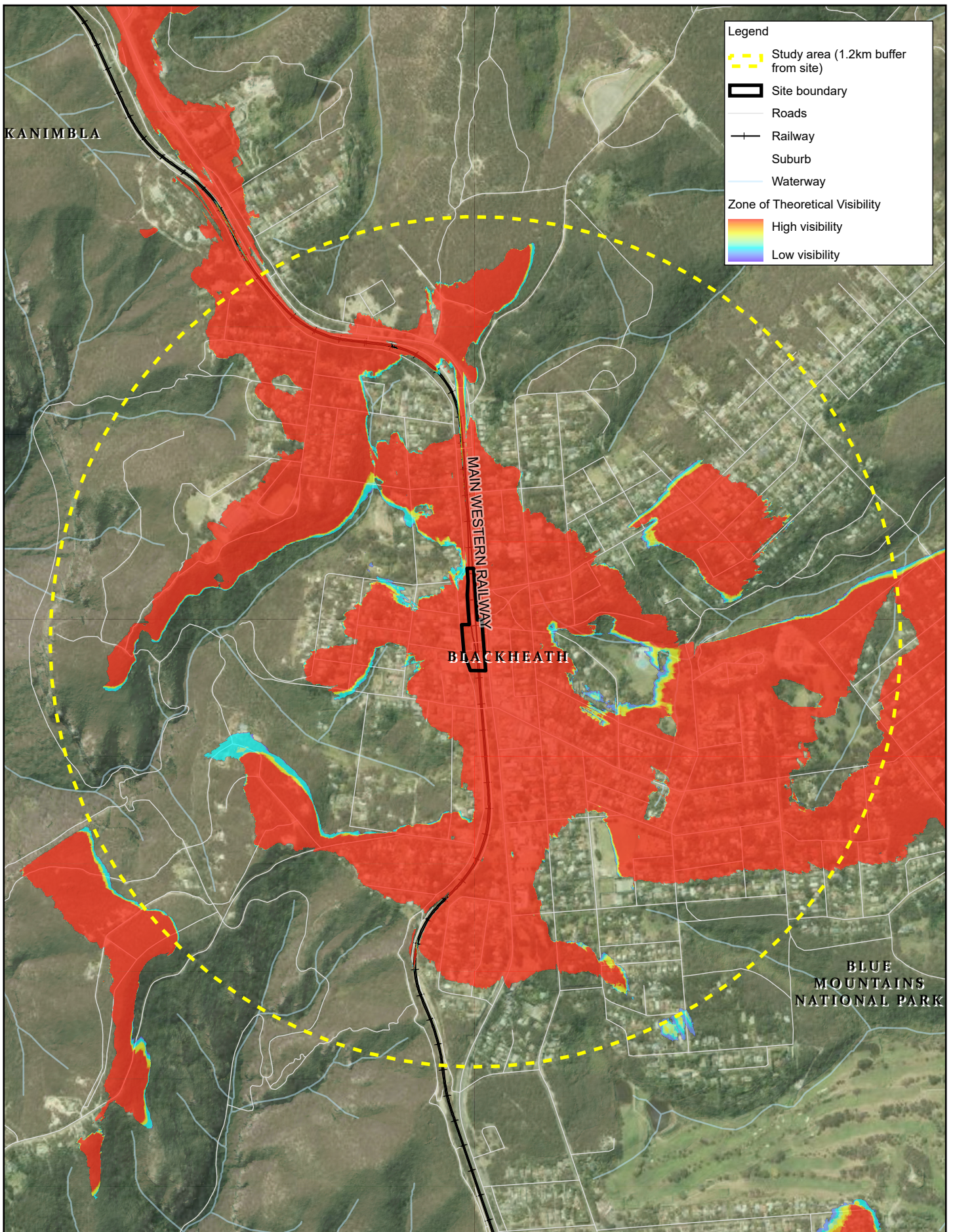


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Mitchell Landscapes

FIGURE 5.2

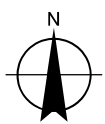
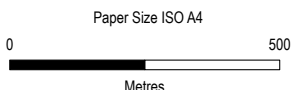


Legend

- Study area (1.2km buffer from site)
- Site boundary
- Roads
- Railway
- Suburb
- Waterway

Zone of Theoretical Visibility

- High visibility
- Low visibility



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Zone of Theoretical Visibility

FIGURE 5.3

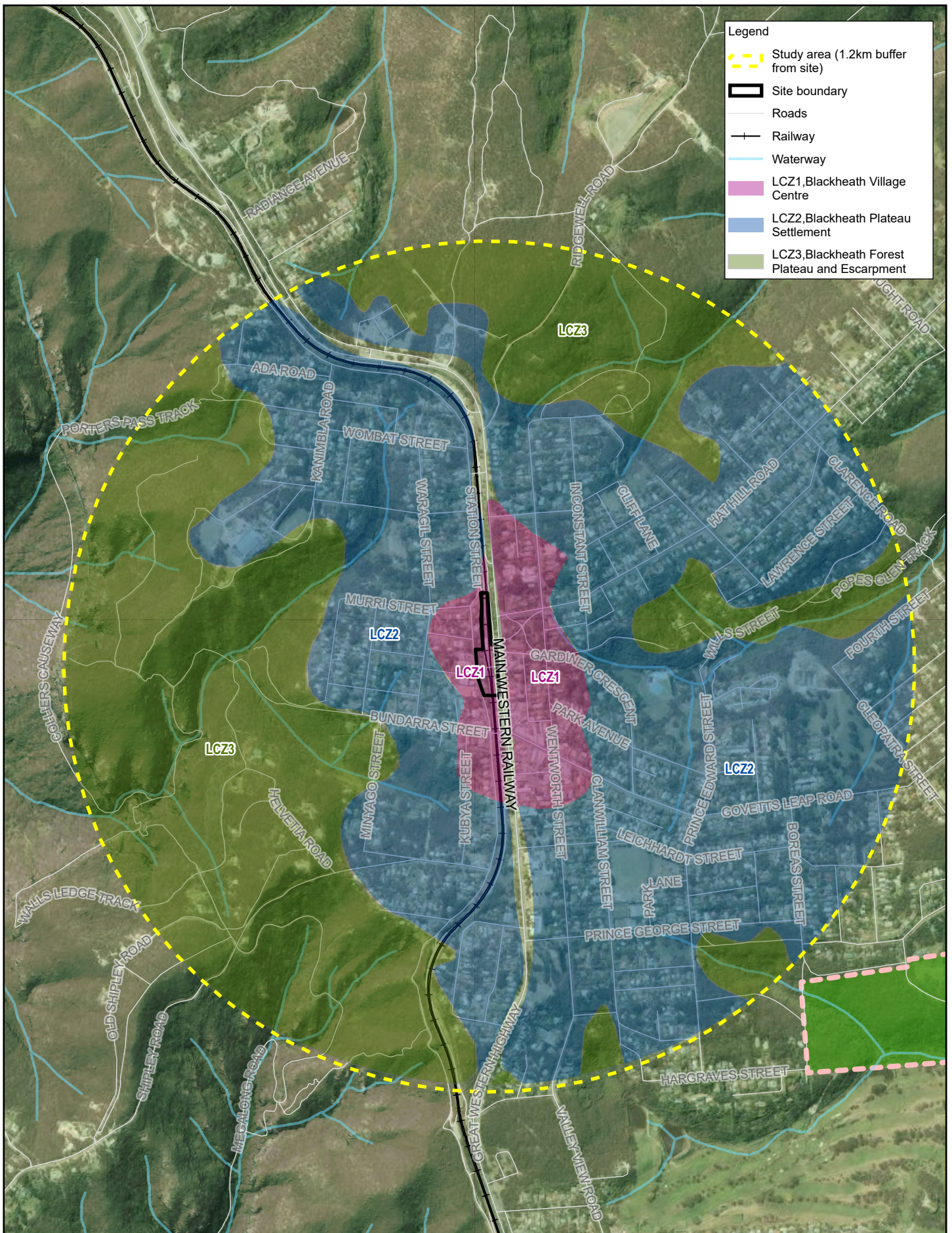
6. Landscape character impact assessment

The study area has been classified into three landscape character zones (LCZs).

These LCZs have different associated sensitivities to potential changes as a result of the Proposal. The sensitivities are discussed below and have informed the landscape impact assessment.

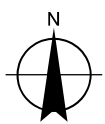
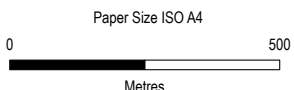
The three LCZs identified are illustrated in Figure 6.1 and are as follows:

- LCZ1: Blackheath Village Centre
- LCZ2: Blackheath Plateau Settlement
- LCZ3: Blackheath Forest Plateau and Escarpment.



Legend

- Study area (1.2km buffer from site)
- Site boundary
- Roads
- Railway
- Waterway
- LCZ1, Blackheath Village Centre
- LCZ2, Blackheath Plateau Settlement
- LCZ3, Blackheath Forest Plateau and Escarpment



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Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

Landscape character zones

FIGURE 6.1

6.1 Landscape character zones

6.1.1 Landscape character zone 1: Blackheath Village Centre

The key features of LCZ1 are described below and illustrated in Figure 6.1 and the characteristics can be seen in Photo 6.1 to Photo 6.4. Refer to Table 6.1 for LCZ impact assessment.



Photo 6.1 View from Great Western Highway junction with Govetts Leap Road, looking east



Photo 6.2 View from Great Western Highway looking south to New Ivanhoe Hotel



Photo 6.3 View from Bundarra Street level crossing looking northwest to the general industrial area on Station Street



Photo 6.4 View from Great Western Highway pedestrian path looking north to Blackheath Gardens entry

LCZ1 is located around the Great Western Highway and the rail corridor, at the centre of the study area. The village is a popular visitor destination, and it caters for residents and visitors. The Greater Blue Mountains Drive bisects the character zone and functions as a major route through the Blue Mountains.

The village centre consists of Blackheath train station, hotels, restaurants, galleries, cafes, a supermarket, an antiques centre, a small goods stores, pharmacies, a medical centre, and a neighbourhood centre.

The majority of shops and restaurants face onto the Great Western Highway, Govetts Leap Road or Station Street and LCZ1 also includes the service station and car parking areas.

Key characteristics of LCZ1 include:

- rows of single or double storey terrace shops with verandas arranged along Great Western Highway and Govetts Leap Road
- a cultural hub area including a visually prominent renovated Victory Theatre building converted into an Antiques centre with café, bookshop and art galleries
- double or triple storey brick or rendered brick buildings at prominent junctions, typically hotels
- a visually prominent central spine of large mature deciduous trees which screen views to the rail corridor, provides spectacular autumn colours, which is a distinguishing feature of the Blackheath character
- terrain is relatively elevated on a high plateau and transport corridors are aligned with the ridgeline
- building heights along the main retail areas are typically up to nine metres (with future development allowed to 12 metres in the General Industrial zoned area adjacent to the station)
- the highest existing building in the area is the Gardner’s Inn Hotel, which is around nine metres high and the Blackheath Station footbridge which is around 8.7 metres higher than the Great Western Highway street level.

Values associated with LCZ1 include the mature tree vegetation, traditional village layout and character of high aesthetic, social and cultural value. LCZ1 makes a strong contribution to the local character therefore has a **high** landscape character value.

Table 6.1 LCZ1 impact assessment

Landscape character zone 1: Blackheath Village Centre	
Anticipated change to landscape character	<p>The proposal site is in the centre of LCZ1. The anticipated changes would include minor modifications to the existing station area and platforms, in particular the addition of the three new lift shafts and works associated with a new entrance ramp, step arrangement and associated minor works to platforms and station infrastructure.</p> <p>The top of the three new lift shafts would be around 2.3 metres higher than the existing footbridge canopy. The lift shaft structure would be 10 metres above the lower level (which is around 11.3 metres when viewed from the Great Western Highway street level). Refer to the Proposal description in Section 3 for more details.</p> <p>The anticipated change to the landscape character of LCZ1 includes would be minor, almost imperceptible.</p>
Susceptibility to change	<p>LCZ1 has a low susceptibility to change, due to the centre of this urban settlement being able to absorb this type of change and development.</p> <p>The Blue Mountains Local Environment Plan includes a future development height limit of 12 metres for the adjacent ‘General Industrial’ zoned land on Station Street, which is higher than the Proposal.</p> <p>Any change caused by the type of development would be unlikely to have a significant adverse effect on the landscape character, condition or value that could not be mitigated.</p>
Sensitivity to change	<p>The sensitivity of a landscape is judged on a combination of the landscape value and the landscapes susceptibility to change from the type of proposed development.</p> <p>The landscape value is High as landscape character elements around this heritage station and community node have high cultural and aesthetic values, particularly as they are adjacent to the ‘Greater Blue Mountains Drive’ (which provides access to the internationally significant Blue Mountains National Park and UNESCO World heritage site). The characteristic elements of LCZ1 make a strong positive contribution to the landscape character and the type of development proposed could have a detrimental effect on the landscape character, condition or value.</p> <p>The susceptibility to change is Low as this urban landscape can absorb change, however the value of the landscape is High due to the values associated with the station area’s aesthetic and heritage values and adjacent tourist drive, therefore the sensitivity to change is moderate.</p>
Magnitude of change	<p>The magnitude of change to landscape character would be low based on the small nature and scale of the change expected to occur. The addition of the three lift shafts within the existing landscape would be generally in keeping with the existing scale, quality, and aesthetic value of LCZ1 and although they would be marginally higher than the existing footbridge structure by around 2.3 metres, the change in height would be almost imperceptible and would not be ‘out-of-character’ with the existing footbridge structure.</p>
Significance of impact	<p>The significance of impact would be moderate-low due to the introduction of components that may be new, but not uncharacteristic within the existing landscape character.</p>

6.1.2 Landscape character zone 2: Blackheath Plateau Settlement

The key features of LCZ2 are described below and illustrated in Figure 6.1 and the characteristics can be seen in Photo 6.5 to Photo 6.8. Refer to Table 6.2 for LCZ impact assessment.



Photo 6.5 View from Wentworth Street, looking west



Photo 6.6 View from Bacchante Street, looking south towards a dwelling at the edge of the settlement plateau



Photo 6.7 View south from Wentworth Street towards the station



Photo 6.8 View looking east down Thirroul Avenue to Blackheath

LCZ2 includes the high ridgeline spine of the transport corridors and the surrounding high plateau around the village centre. It is confined by the steep hillslopes, gullies and cliff drops, where dramatic topography has typically prevented further urban development.

The wider village is a popular visitor destination, with the Greater Blue Mountains Drive bisecting the character area and functioning as a major route through the Blue Mountains. Other local roads through LCZ2 are popular with visitors travelling to scenic lookouts, particularly Govetts Leap Road, which connects the village centre to the Blue Mountains Heritage Centre, which is a popular 'gateway' to the National Park and Blue Mountains UNESCO World Heritage Site.

Key features of LCZ2 are associated with a heritage settlement, leafy low-density residential areas surrounded by a gardens, forest and unique geography. Community facilities include Blackheath Memorial Park, Blackheath Pool, and Blackheath Glen Tourist Park, as well as the Campbell Rhododendron Gardens and other municipal parks and playgrounds.

Key characteristics of LCZ2 include the following:

- leafy residential traditional street patterns, with single-story detached dwellings, large setbacks, many with local heritage values
- dwellings are typically Victorian-era weatherboard houses, with white picket fences and angled roofs (to accommodate the snowy mountainous climate)
- dwellings are typically surrounded by mature gardens and are on wide streets with large exotic deciduous street trees, (which give the village characteristic seasonal colour in autumn)
- building heights typically do not exceed six metres, however the Blue Mountains LEP height limitation in this area is generally a maximum of eight meters high (or 5.5 metres in areas of ‘scenic protection land’ at the edge of the plateau and settlement)
- roads and built form tend to follow the high points of the terrain, with buildings sited in valleys, peaks, or sloping terrain.

Values associated with LCZ2 include the leafy residential streetscapes, attractive detached dwellings with mature gardens, areas of heritage value and areas of scenic protection land (at the edges of the plateau, in areas which can be viewed from scenic lookouts). LCZ2 also has scenic value and makes a strong contribution to the local character. LCZ2 therefore has a **high** landscape character value.

Table 6.2 LCZ2 impact assessment

Landscape character zone 2: Blackheath Plateau Settlement	
Anticipated change to landscape character	The proposal site is not in LCZ2 and the anticipated change to the landscape character of LCZ2 would be indirect and relates to discernible changes and modifications of the landscape within LCZ1. The LCZ 2 heritage village residential area character is located on undulating land, high on the plateau and long filtered views to the top of the three lift shafts may be present from higher areas of LCZ2.
Susceptibility to change	The Blackheath Plateau Settlement LCZ2 has a low susceptibility to change, due to the urban settlement being able to absorb this type of change and development. Any change caused by the type of development would be unlikely to have a significant adverse effect on the landscape character, condition or value that could not be mitigated.
Sensitivity to change	The sensitivity of change would be negligible . The Proposal is sited outside of LCZ2 and therefore would have no direct changes to the characteristics within LCZ2.
Magnitude of change	The magnitude of change would be negligible .
Significance of impact	The significance of impact would be negligible due to the Proposal being outside of LCZ2. Any long views of the top of the lift shafts from within LCZ2 will not be uncharacteristic with existing long views to LCZ1 from LCZ2, therefore the landscape character of LCZ2 will not be significantly impacted.

6.1.3 Landscape character zone 3: Blackheath Forest Plateau and Escarpment

The key features of LCZ3 are described below and illustrated in Figure 6.1 and the characteristics can be seen in Photo 6.9 to Photo 6.12. Refer to Table 6.3 for LCZ impact assessment.



Photo 6.9 View of the Blue Mountains visitor centre, looking north



Photo 6.10 View from Govetts Leap Road within Blue Mountains National Park, looking north



Photo 6.11 View north-east from Bacchante Street towards Campbell Rhododendron Garden entrance



Photo 6.12 View from Govetts Leap Road within Blue Mountains National Park, looking south

LCZ3 includes the forested areas surrounding the village, including reserves, parks, escarpment areas and large areas of forest, which join onto the Blue Mountains National Park and UNESCO World Heritage Site. These areas represent ecologically significant habitats. Views within LCZ3 are often enclosed, due to dense forest vegetation. At the periphery of the study area however, LCZ3 has significant topographical variations, which open up the visual envelope and allows for outstanding scenic views to the surrounding area (typically away from the proposal site, from cliff tops to escarpments, gorges and deep long valleys).

Notable places within the study area which are frequently visited for their scenic beauty include Fort Rock and the adjacent escarpment, the Blue Mountain Heritage Centre and the 'Greater Blue Mountains Drive'. Other areas just outside of the study area but accessed through LCZ3 (from the Great Western Highway and Govetts Leap Road) include Govetts Leap Lookout, Evans Lookout, Perrys Lookdown and George Phillips Lookout.

These places typically have spectacular views over cliff tops to Grose Gorge or to the Megalong Valley (in the opposite direction to the proposal site).

Key characteristics of LCZ3 include the following:

- relatively undisturbed landscape of continuous forest on high sandstone plateau, surrounded by steeply sloping gullies and dramatic cliffs
- dense *Eucalyptus* canopy cover with vegetation heights of approximately 20 to 60 metres
- limited built form within the forest setting, with winding roads to car parks at vista points
- Sydney Peppermint Gum Forest and a long sheer rock escarpment and cliffs to the west; with Blue Gum Forest, cliffs, deep valleys and gorges to the east and areas of crown land and municipal reserves within the periphery of the village, including the Campbell Rhododendron Gardens
- views at the perimeter of the study area to the surrounding landscape of the Blue Mountains National Park and UNSECO World Heritage Site, include mountainous ranges, rocky outcrops and escarpments, caves and waterfalls. Many of these natural attractions are popular tourist attractions (including Govetts Leap Lookout, Evans Lookout, Perrys Lookdown and George Phillips Lookout) can be accessed by walking tracks which typically connect to adjoining villages.

Values associated with LCZ3 include scenic values associated with the Greater Blue Mountains Drive, scenic values associated with the lookouts, particularly towards the National Park area and scenic and ecological values associated with the forest vegetation as a continuous habitat corridor, adjacent to the National Park. LCZ3 has high scenic value and makes a very strong contribution to the local character. LCZ 3 therefore has a **high** landscape character value.

Table 6.3 LCZ3 impact assessment

Landscape character zone 3: Blackheath Forest Plateau and Escarpment	
Anticipated change to landscape character	LCZ3 is typically more than 1 km from, the proposal site, in most directions. The anticipated change to the landscape character of LCZ3 would be indirect and relates to discernible changes and modifications of the landscape within LCZ1, associated with the new lift shafts. The landscape character area is typically forested and on a high plateau and therefore views within the study areas are typically either enclosed by the surrounding forest, or looking away from the proposal site, towards the Blue Mountains National Park area, Grose Gorge or the Megalong valley.
Susceptibility to change	The LCZ3 Blue Mountains Forest and Escarpment has a high susceptibility to change, due to the high ecological and aesthetic values of the surrounding area, adjacent to the Blue Mountains National Park, and World Heritage Area. The type of development proposed could have a detrimental effect on the landscape character, condition or value. Mitigation measures are unlikely to reduce the impacts of the change within this landscape setting.
Sensitivity to change	The sensitivity of change would be negligible . The Proposal is sited outside of LCZ3 and therefore would have no direct changes to the characteristics within the LCZ3.
Magnitude of change	The magnitude of change would be negligible .
Significance of impact	The significance of impact would be negligible due to the Proposal being outside of LCZ3. Any long views of the top of the lift shafts from within LCZ3 will not be uncharacteristic with existing long views to LCZ1 from LCZ3, therefore the landscape character of LCZ3 will not be significantly impacted.

7. Visual impact assessment

Based on the existing environment analysis, sensitive visual receivers were identified and viewpoint locations selected for assessment.

Sensitive visual receivers within the Proposal viewshed include the following:

- residents with views to the Proposal
- road users along the Great Western Highway (and Greater Blue Mountains Drive)
- local road users (along local roads)
- train users (including passengers and workers travelling along the Blue Mountains train line)
- pedestrians in the village centre
- nearby workers (or other outdoor workers).

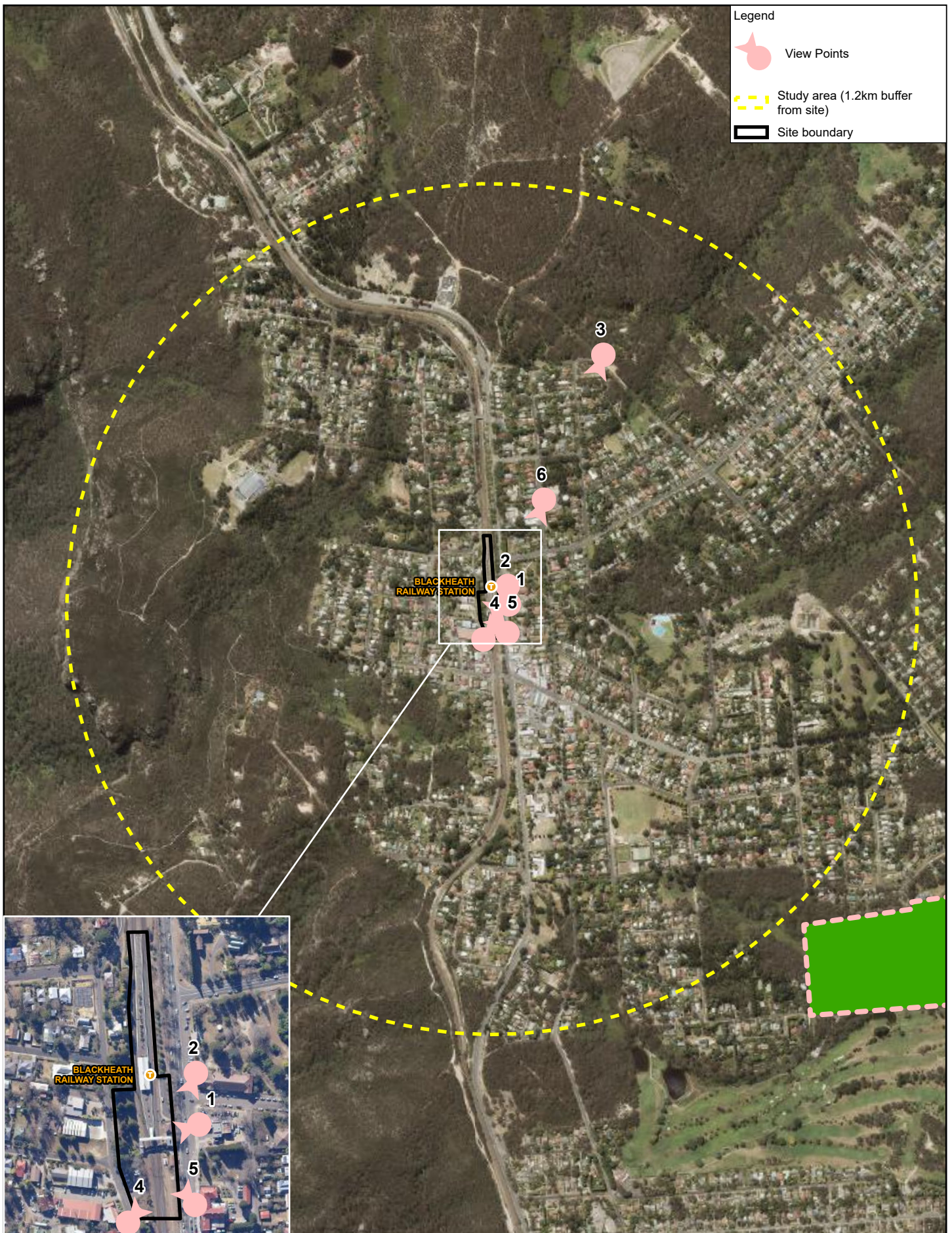
7.1 Viewpoint locations

The following section provides a visual impact assessment of the Proposal from the following selected representative viewpoint locations as shown in Table 7.1 and Figure 7.1. Refer to Section 7.1.1 to Section 7.1.7 for an assessment of the visual impact for each viewpoint location.




These viewpoints have been selected to appropriately represent the sensitive visual receivers in close proximity to the proposal site, sensitive visual receivers who may have long views to the Proposal or sensitive visual receivers at places of high landscape value, within the study area.

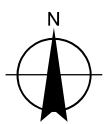
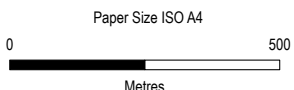
Table 7.1 Viewpoint locations

Viewpoint	Location
Viewpoint location 1 (VP01)	Blackheath Station pedestrian crossing, opposite at the Old Tythe Barn – Great Western Highway
Viewpoint location 2 (VP02)	Blackheath Area Neighbourhood Centre, 41 Gardiner Crescent, Blackheath
Viewpoint location 3 (VP03)	Campbell Rhododendron Gardens, 1 Bacchante Street, Blackheath
Viewpoint location 4 (VP04)	132 Station Street, Blackheath
Viewpoint location 5 (VP05)	Gardners Inn Hotel – 255 Great Western Highway, Blackheath.
Viewpoint location 6 (VP06)	158 Wentworth Street, Blackheath (Next to Sacred Heart Church)



Legend

-  View Points
-  Study area (1.2km buffer from site)
-  Site boundary



Transport for NSW
Blackheath Station Upgrade
 Landscape and Visual Impact Assessment

Project No. 12562533
 Revision No. 0
 Date 23/02/2022

Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56

Viewpoints locations

FIGURE 7.1

7.1.1 Viewpoint location 1: Blackheath Station pedestrian crossing

Viewpoint location 1 (VP01) is located at a pedestrian crossing along the Great Western Highway facing west towards Blackheath Station, as shown in Figure 7.2 and Photo 7.1. Refer to Photo 7.2 for the viewpoint photomontage and Table 7.2 for assessment.



Figure 7.2 VP01 Location map



Photo 7.1 Viewpoint location 1: Pedestrian crossing adjacent to Blackheath Station



Photo 7.2 Photomontage of viewpoint location 1 showing proposed lifts integrated with existing pedestrian footbridge

Table 7.2 Viewpoint location 1 assessment

Criteria	Comments
Location and View Direction	Location (MGA Zone 55); E: 804715, N: 6273571 Elevation: 1062 metres VP01 is situated around 30 metres east of the Proposal and is facing west. This viewpoint is representative of views experienced by pedestrians accessing Blackheath Station via the Great Western Highway pedestrian crossing as well as vehicle users along the Great Western Highway and Greater Blue Mountains Drive.
Description of Existing View	The foreground shows a raised concrete pedestrian path and drop kerb that becomes level to the road at the crossing. The middle ground shows a tarmac single carriageway road with low concrete kerb edging, The small heritage single storey commercial building is in the centre of view, with the old Blackheath Station buildings adjacent to the road. The upper level of the existing pedestrian footbridge can be seen in the background, partially screened by the single-story heritage building. At the road edge is a row of mature and dense canopy exotic trees.
Anticipated Change to View	The Proposal includes the new station entry plaza and three lift shafts that would be visible adjacent to the existing footbridge structure, and between the existing buildings seen within the centre of view.
Sensitivity to change	High , due to communities that place value upon the urban landscape and enjoyment of views of their setting. This includes road users on the Greater Blue Mountains Drive.
Magnitude of change	Low , as there would be a minor alteration to the existing view. The introduction of the new entry plaza and the three lift shaft components would increase the built form within view. However the introduction of components may not be uncharacteristic within the existing view.
Significance of impact	Moderate , there would be a change to the existing view. The change has the potential to be a beneficial change due to improved urban design opportunities including landscaping and improved interface between the station and highway.

7.1.2 Viewpoint location 2: Blackheath Area Neighbourhood Centre

Viewpoint location 2 (VP02) is located on the corner of the Great Western Highway and Gardiner Crescent, facing south-west as shown in Figure 7.3 and Photo 7.3. Refer to Table 7.3 for assessment.



Figure 7.3 VP02 Location map



Photo 7.3 Viewpoint location 2: Existing Blackheath Area Neighbourhood Centre

Table 7.3 Viewpoint location 2 assessment

Criteria	Comments
Location and View Direction	Location (MGA Zone 55); E: 804707, N: 6273657 Elevation: 1059 metres VP02 is situated around 80 metres north-east of the proposal and is facing south-west. This viewpoint is representative of views experienced by pedestrians accessing the Blackheath Area Neighbourhood Centre and the Blackheath Library, as well as road users on the Greater Blue Mountains Drive entering the village centre from the north.
Description of Existing View	The foreground shows a sealed tarmac road with a low concrete kerb edging and a row of street trees on the adjacent side of the road, which screens views beyond. The middle ground shows the continuation of the highway running south within the view with commercial properties visible along the side of the road and into the distance. Some built form can be seen in glimpses through the screening street trees.

Criteria	Comments
Anticipated Change to View	The proposed three lift shafts will be screened due to the seasonal foliage on the trees during the summer months, but during the winter months, the Proposal may be periodically visible, with filtered views through the trees.
Sensitivity to change	High due to communities that place value upon the urban landscape and enjoyment of views of their setting.
Magnitude of change	Negligible (Summer) – for the majority of the year, the deciduous tree foliage screens the Proposal and there would be little change to the view. Low (Winter) – in winter when the seasonal foliage is not present, filtered views to the Proposal would be seen through bare trees.
Significance of impact	Negligible (Summer) as views to the Proposal will be filtered by street trees in summer. Moderate (Winter) as views to the Proposal will be seen through bare trees in winter.

7.1.3 Viewpoint location 3: Campbell Rhododendron Gardens – Bacchante Street

Viewpoint location 3 (VP03) is located along Bacchante Street within Blackheath, facing south-west as shown in Figure 7.4 and Photo 7.4. Refer to Table 7.4 for assessment.



Figure 7.4 VP03 Location map



Photo 7.4 Viewpoint location 3: Existing Campbell Rhododendron Gardens

Table 7.4 Viewpoint location 3 assessment

Criteria	Comments
Location and View Direction	Location (MGA Zone 55); E: 805028, N: 6274288 Elevation: 1082 metres VP03 is situated around 800 metres north-east of the proposal and is facing south-west. This viewpoint is representative of views experienced by road users and pedestrians accessing the Campbell Rhododendron Gardens and residential properties.
Description of Existing View	The foreground shows a tarmac road with a low concrete kerb edging. The middle ground shows mature residential gardens surrounded by mature native and exotic trees, an understory of shrubs, with a two-storey residential building seen within the centre of view. The background is filtered by vegetation and glimpses of residential buildings can be seen towards the Campbell Rhododendron Garden.
Anticipated Change to View	The proposed lift shafts would not be visible due to the 700-metre distance, elevation and the dense vegetation screening the view.
Sensitivity to change	High , as the occupiers of nearby residential properties place value upon the landscape and enjoyment of views of their setting
Magnitude of change	Negligible , as there is no change to the elements, features or characteristics of the view.
Significance of impact	Negligible

7.1.4 Viewpoint location 4: Station Street, Blackheath

Viewpoint location 4 (VP04) is located on Station Street, facing north-east as shown in Figure 7.5 and Photo 7.5. Refer to Photo 7.6 for the viewpoint photomontage and Table 7.5 for assessment.



Figure 7.5 VP04 Location map



Photo 7.5 Existing viewpoint location 4: Station Street



Photo 7.6 Proposed viewpoint location 4 Photomontage

Table 7.5 Viewpoint location 4 assessment

Criteria	Comments
Location and View Direction	Location (MGA Zone 55); E: 804627, N: 6273557 Elevation: 1077 metres VP04 is situated around 80 metres south-west of the proposal and is facing north-east. This viewpoint is representative of views experienced by road users and pedestrians accessing the Blackheath Station parking facilities, and views from Blackheath Trade and Business Centre and residential properties.
Description of Existing View	The foreground shows a tarmac road and parking area with pedestrian pathways within the left of view. The centre of view shows parked vehicles within the train station parking area, sectioned off from the road by timber posts. The parking area is partially enclosed with fencing and a narrow garden bed. The background consists of exotic trees and understory shrubs which screen distant views beyond the parking area.
Anticipated Change to View	The proposed lift shafts will be periodically visible due to the seasonal foliage on the trees screening the view during summer months, but with filtered views during the winter months. As part of the works, three mature trees and large shrubs will be removed on the south-western side of the proposal site (with 16 mature trees retained). The removal of the vegetation increases the filtered views through the tree canopy to the Proposal, however it is anticipated that the remaining mature canopy trees will screen most of the Proposal. During the construction phase, the construction compound site may be visible from this viewing location to the far right of view. Temporary visual impacts associated with the construction compound include possible visual impacts associated with laydown area, storage of equipment and materials, temporary site office building, amenities and site fencing and hoarding. Refer to section 3.2.2 for further information. Mitigation measures to reduce the temporary impacts from the construction compound are outlined in section 8.1.3.
Sensitivity to change	High , as views include those from nearby residential properties with long viewing periods, in close proximity to the Proposal.
Magnitude of change	Low (Summer) In Summer, there would be filtered views of the Proposal through trees, with views partially screened by tree foliage. There would be a minor alteration to the existing view and the introduction of the new three lift shaft components would increase the built form within view. The removal of the three trees and shrubs will slightly increase visibility through to the Proposal, with more contrast in the summer months, however the magnitude of change may not be uncharacteristic within the existing view. Low (Winter) The filtered views through trees would become more visible during the winter months, due to the loss of seasonal foliage. There would be a minor alteration to the existing view and the introduction of the new three lift shaft components would increase the built form within view. The removal of the three trees and shrubs will slightly increase visibility through to the Proposal, however the magnitude of change may not be uncharacteristic within the existing view due to the existing filtered views being more visible in winter.
Significance of impact	Moderate , as there would be some filtered views from residential properties in close proximity to the Proposal, but the change would not be uncharacteristic. Views to the Proposal will be more visible in winter months, through bare trees.

7.1.5 Viewpoint location 5: Gardners Inn Hotel – Great Western Highway

Viewpoint location 5 (VP05) is located along Great Western Hwy, facing north-west as shown in Figure 7.6 and Photo 7.7. Refer to Table 7.6 for assessment.



Figure 7.6 VP05 Location map



Photo 7.7 Existing viewpoint location 5 Gardners Inn Hotel – 255 Great Western Highway, Blackheath

Table 7.6 Viewpoint location 5 assessment

Criteria	Comments
Location and View Direction	Location (MGA Zone 55); E: 804688, N: 6273517 Elevation: 1077 metres VP05 is situated about 70 metres south-east of the Proposal and is facing north-west. This viewpoint is representative of views experienced by pedestrians within Blackheath.
Description of Existing View	The foreground of view shows a pedestrian walkway adjacent to a shopping strip located on the Great Western Highway. The middle ground shows a tarmac road with parked cars located on either side of the highway, and street trees aligning the adjacent side of the highway. The background views are filtered by the street trees, with glimpses through to the railway corridor and the existing train station footbridge which can be seen towards the right of view, with filtered views to commercial properties towards the left of view, over the railway tracks.

Criteria	Comments
Anticipated Change to View	The proposed lift shafts will be periodically visible to the right of view with the seasonal foliage on the street trees filtering the view. The three lift shafts would be located near the existing train station footbridge.
Sensitivity to change	High , due to communities that place value upon the urban landscape and enjoyment of views of their setting.
Magnitude of change	<p>Negligible (Summer) – for the majority of the year, the deciduous tree foliage screens the Proposal and there would be little change to the view.</p> <p>Low (Winter) – in winter when the seasonal foliage is not present, filtered views to the Proposal would be seen through bare trees.</p>
Significance of impact	<p>Negligible (Summer) as views to the Proposal will be filtered by street trees in summer.</p> <p>Moderate (Winter) as views to the Proposal will be seen through bare trees in winter.</p>

7.1.6 Viewpoint location 6: Wentworth Street, Next to Sacred Heart Church.

Viewpoint location 6 (VP06) is located along Wentworth Street, Blackheath adjacent to the Sacred Heart Church, facing south, as shown in Figure 7.7 and Photo 7.8. Refer to Photo 7.9 for the viewpoint photomontage and Table 7.7 for assessment.



Figure 7.7 VP06 Location map



Photo 7.8 Viewpoint location 6: Wentworth Street, Blackheath – existing view



Photo 7.9 Viewpoint location 6 Photomontage

Table 7.7 Viewpoint location 6 assessment

Criteria	Comments
Location and View Direction	Location (MGA Zone 55); E: 804821, N: 6273898 Elevation: 1076 m VP06 is situated about 350 metres north-east of the Proposal and is facing south-west. This viewpoint is representative of views experienced by nearby residents and church.
Description of Existing View	The foreground shows a tarmac road within a residential street and housing on the right side of the road. On the left of view pedestrian steps can be seen heading upwards from the roadway to the informal footpath adjacent to the perimeter wall of the churchyard. A low brick wall divides the churchyard from the street. The view is elevated within the surrounding area and allows long views into the distance over the residential area and varied tree canopy cover, with glimpses of residential built form beneath the canopies. The distant background shows the adjacent hillside with a variety of mature trees.
Anticipated Change to View	The Proposal would not be visible due to the 350 metre distance from the viewpoint and the screening elements within the existing view. The orange shape is a representation of where the Proposal would be located, behind the houses and vegetation and would not be visible.
Sensitivity to change	High , due to the nearby residents and the communities that place value upon the urban landscape and enjoyment of views of their setting.
Magnitude of change	Negligible , as there would be no change in the view.
Significance of impact	Negligible , as there would be no change in the view.

7.1.7 Other viewing locations

There were several other visual receiver locations within the viewshed where views were limited, or not achieved or the visual receivers were represented by another similar viewpoint, therefore no assessment has been undertaken. These are discussed in Table 7.8 and can be seen in Photo 7.10 to Photo 7.13.

Table 7.8 Viewpoint locations 7 – 9 assessments

Other viewpoints	Location	Description
Viewpoint location 7 (VP07)	Level crossing at Bundarra Street, looking north from near the junction with the Great Western Highway.	The foreground shows a railway line with overhead cabling and grassed embankments on either side of the rail. The middle ground to the left shows commercial properties and roadside car parking to the right. In the centre a distant background, the pedestrian bridge at Blackheath Station is visible about 180 metres away. It is expected that the Proposal would be visible from this location.
Viewpoint location 8 (VP08)	Blackheath Station pedestrian footbridge at train station	The foreground reveals a view from the pedestrian bridge at Blackheath Station about eight metres above ground level, with the heritage listed Old Tythe Barn being visible on the left. The middle ground shows railway tracks facing south, with grassed embankments and mature trees on either side. The background reveals mature trees and filtered views of commercial and residential properties. It is expected that part of the Proposal would be visible from this location.
Viewpoint location 9 (VP09)	Kanimbla Road junction with Thirroul Avenue	The foreground shows a tarmac single carriageway road with a vegetated perimeter and no kerb edging. The middle ground shows dense bushland with mature eucalyptus trees and understory shrubs and few residential properties to the left. It is not expected that the Proposal would be visible from this location due to built elements and vegetation screening the views.
Viewpoint location 10 (VP10)	Blue Mountains Heritage Centre at the intersection of Lyndsay Lane and Govetts Leap Road	This viewpoint is at the entrance to the Blue Mountains Heritage Centre within the National Park and UNESCO World Heritage Site. VP10 is facing south-west and shows forest surrounding the roads. It is not expected that the Proposal would be visible from this location due to the two kilometre distance and forest vegetation screening the views.

7.1.7.1 Viewpoint location 7: Level crossing – Bundarra Street, Blackheath

VP07 is located along Bundarra Street at the level crossing and is facing north as shown in Photo 7.10



Photo 7.10 Viewpoint location 7: Level crossing – Bundarra Street – existing view

7.1.7.2 Viewpoint location 8: Blackheath Station – pedestrian footbridge

VP08 is located from the station footbridge and is facing south, as shown in Photo 7.11.



Photo 7.11 Viewpoint location 8: Rail Corridor from the station footbridge – existing view

7.1.7.3 Viewpoint location 9: Kanimbla Road – junction with Thirroul Avenue

VP09 is located along the highpoint and intersection of Kanimbla Rd and Thirroul Ave and is facing south-east as shown in Photo 7.12.



Photo 7.12 Viewpoint location 9: Kanimbla Rd junction with Thirroul Avenue – existing view

7.1.7.4 Viewpoint location 10: Blue Mountains Heritage Centre and National Park

VP10 is located at the entrance to the Blue Mountains Heritage Centre, at the intersection of Lyndsay Lane and Govetts Leap Road. It is within the National Park and UNESCO World Heritage Site. VP10 is facing south-west as shown in Photo 7.13 and is two kilometres from the proposal site.



Photo 7.13 Viewpoint location 10: Blue Mountains Heritage Centre – existing view

7.2 Landscape and visual impacts during construction

Construction works would result in temporary landscape and visual impacts which may extend beyond the proposal site. Landscape and visual impacts associated with construction activities are generally of greater magnitude than those associated with operation, however are temporary in nature.

Landscape and visual impacts during construction resulting from those activities outlined in section 3.2.2 may include:

- the presence of a crane required for lift construction
- the presence of excavators, crane truck, piling rig, concrete trucks, and concrete pump and other plant
- temporary safety screens between the work being undertaken and the public domain, platform and concourse
- presence of construction traffic and workers
- temporary parking areas
- temporary site office building and amenities
- importation and storage of construction equipment and plant
- materials stockpiling and the presence of incomplete structures
- construction activities to the existing pedestrian footbridge, lifts and stairs, which may be visible above safety screens from street level.

Mitigation measures to reduce the temporary impacts from the construction works are outlined in section 8.1.3.

8. Mitigation measures

The following section recommends mitigation measures that aim to minimise the potential adverse impacts on:

- the character of the landscape
- views from nearby sensitive visual receivers.

The recommended mitigation measures address the most visual elements of the Proposal as well as referencing any relevant considerations drawn from the legislation and policy review.

8.1 General recommendations

General considerations for the detailed design phase include:

- utilise design strategies to minimise the visual prominence of new components affecting views to and from the station area
- ensure Proposal design, siting and materiality is of high quality and sympathetic to the existing heritage context of the station precinct and contributes positively to the existing landscape character values
- incorporate new landscape planting to soften the visual impact of additional paving areas and perimeter fencing. Ensure any new landscape planting enhances the public realm and aligns with Crime Prevention Through Environmental Design principles
- ensure landscape and urban design contributes positively to the existing landscape character and principles outlined in the Sustainable Design Guidelines, Around the Tracks: urban design for heavy and light rail, Blackheath Village Centre Public Domain Masterplan, and Blue Mountains Development Control Plan 2015 specific to Blackheath Village.

8.1.1 Vegetation

General considerations for vegetation include:

- retain vegetation, particularly the mature avenues trees on the boundary of Great Western Highway and the Railway corridor, as they screen the Proposal. With only three trees requiring removal and 16 being retained, most of the existing visual screening is maintained to minimise visual impacts.
- ensure new landscape planting utilises a planting palette consistent with the existing station precinct and surrounding area, to achieve an integrated outcome
- choose plant species that reflects the existing landscape character of the Blackheath cooler climate, for example Rhododendrons (as suggested by Council), to reflect the recent landscape history of the area and the Campbell Rhododendron Gardens.

8.1.2 Design and materiality

General considerations for design components include:

- ensure the Proposal's shape, colour and materials complements the heritage style of the existing station structures, particularly the footbridge
- avoid bright colours and reflective materials and colours to be in-keeping with the existing heritage area and surrounding urban fabric
- ensure the Proposal's components and materiality are of high quality and are designed to deter graffiti and allow for easy graffiti removal
- avoid locating permanent signage which may impede or reduce the character and amenity of views along the Greater Blue Mountains Drive
- minimise visual clutter by minimising the number of service poles required with the public realm and station precinct, by utilising built form mounting and combining services on shared poles
- ensure design and materiality of services components such as poles, signage and lighting contribute positively to the heritage context.

8.1.3 Construction activity and storage

General considerations for construction activity and storage include:

- take all practical measures to ensure construction equipment, stockpiles of stored materials, and other visible elements are located away from key views, to or from the sensitive visual receivers identified in this assessment particularly from VP04 and along the Greater Blue Mountains Drive (VP01, VP02, VP05).
- should such equipment or stockpiles be located in a visually prominent location for any reasonable period of time, incorporate screening measures and practices to ensure sites are kept tidy
- fencing for the compound site is to include hoarding or screening material
- the site compound will be kept tidy and general tidiness will be maintained at the end of each shift
- all materials and equipment will be stored within the site compound or within designated work areas.

9. Conclusion

This LVIA has been undertaken to identify the potential effects of the Blackheath Station Upgrade based on its concept design.

Blackheath is one of a chain of small villages near the Blue Mountains National Park. The rail line and Great Western Highway follows the main western ridge, and urban development is constrained by steep slopes. The centre of this heritage settlement radiates from the station area and Great Western Highway retail strip, with residential areas surrounding in all directions.

Landscape values in the wider area include the nearby natural features such as cliffs, escarpments, gorges and forest; heritage features associated with the village centre particularly along Great Western Highway, Govetts Leap Road and in the station precinct; and distant views from lookouts typically looking towards the Blue Mountains or Megalong Valley and away from the proposal site.

A total of three landscape character zones were identified within the study area, including Blackheath Village Centre, Blackheath Plateau Settlement and Blackheath Forest Plateau and Escarpment.

LCZ1 Blackheath Village Centre was found to have moderate-low impact, associated with the heritage values and character of the station area and Greater Blue Mountains Drive. The remaining landscape character zones were found to have Negligible impact. Overall, this assessment found there to be no significant landscape character impacts arising from the Proposal.

Sensitive visual receivers in the study area include residents, pedestrians, road users and commuters. Six viewpoint locations were chosen to assess the visual impact of the Proposal on sensitive receivers within the study area. Visual impacts were assessed using panoramas of the existing view and photomontages were created illustrating the proposed view of the Proposal, from three viewpoint locations. The assessment found that the Proposal generally has negligible to moderate visual impacts on all viewpoint locations.

The most significant impacts are from viewpoint locations one and four, representing views from pedestrians, road users on Great Western Highway and residential houses in close proximity to the Proposal. During winter months, views from locations two and five will be filtered through bare tree branches, when the seasonal foliage is not present. Mitigation measures proposed for the construction and operational stages should be incorporated into detailed design and construction management plans to reduce impacts.

The following Table 9.1 and Table 9.2 provides a summary of landscape and visual impacts for the Proposal.

Table 9.1 Summary of landscape impacts

LCZ	Description	Sensitivity to change	Magnitude of change	Overall Rating
LCZ1	Blackheath Village Centre	Moderate	Low	Moderate-low
LCZ2	Blackheath Plateau Settlement	Negligible	Negligible	Negligible
LCZ3	Blackheath Forest Plateau and Escarpment	Negligible	Negligible	Negligible

Table 9.2 Summary of visual Impacts

Viewpoint	Location	Sensitivity to change	Magnitude of change	Overall Rating
VP01	Blackheath Station pedestrian crossing	High	Low	Moderate
VP02	Blackheath Area Neighbourhood Centre	High	Negligible (Summer) Low (Winter)	Negligible (Summer) Moderate (Winter)
VP03	Campbell Rhododendron Gardens, Bacchante Street, Blackheath	High	Negligible	Negligible

Viewpoint	Location	Sensitivity to change	Magnitude of change	Overall Rating
VP04	Station Street, Blackheath	High	Low (Summer) Low (Winter)	Moderate
VP05	Gardners Inn Hotel	High	Negligible (Summer) Low (Winter)	Negligible (Summer) Moderate (Winter)
VP06	158 Wentworth St, (Next to Sacred Heart Church)	High	Negligible	Negligible

10. References

- TfNSW (2020). Environmental impact assessment practice note EIA-N04 – Guideline for landscape character and visual impact assessment, Version 2.2.
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- Landscape Institute and Institute of Environmental Management & Assessment, UK (2013), *Guidelines for Landscape and Visual Impact Assessment, Third Edition*.
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- TfNSW, *Managing Heritage: issues in rail projects guidelines*, December 2015
- TfNSW, *Sustainable Design Guidelines Version 4.0, May 2017*
- TfNSW. (2017). *Sustainable Design Guidelines (Version 4.0)*.

Appendix A

Photomontages



EXISTING VIEW



PROPOSED DESIGN



KEY PLAN

View Direction: 246° - 326°
 Horizontal Field Of View: 80°
 Camera Height: 1.7 m
 Camera Type: Canon EOS 5D IV
 Lens Type: 50 mm
 Photograph Time & Date: 11:57,
 2nd December 2021

Location: 264 Great Western Hwy,
 Blackheath, Sydney
 Coordinates: 248158, 6275108
 (GDA 1994 MGA Zone 56)
 Viewpoint Elevation: 1066 m
 Date of Photomontage: 14th January 2022
 Issue: v 01

Blackheath Station Upgrade TAP
 Transport for New South Wales

Viewpoint 02 : Pedestrian crossing adjacent to Blackheath Station

GHD Pty Ltd
 Level 8, 180 Lonsdale Street
 Melbourne VIC 3000
 T 61 3 8687 8000 E melmail@ghd.com.au W www.ghd.com



EXISTING VIEW



PROPOSED DESIGN



KEY PLAN

View Direction: 1° - 81°
 Horizontal Field Of View: 80°
 Camera Height: 1.7 m
 Camera Type: Canon EOS 5D IV
 Lens Type: 50 mm
 Photograph Time & Date: 12:38,
 2nd December 2021

Location: 132 Station St, Blackheath,
 Sydney
 Coordinates: 248076, 6275084
 (GDA 1994 MGA Zone 56)
 Viewpoint Elevation: 1069 m
 Date of Photomontage: 14th January 2022
 Issue: v 01

Blackheath Station Upgrade TAP
Transport for New South Wales

Viewpoint 05 : Station Street Car Park



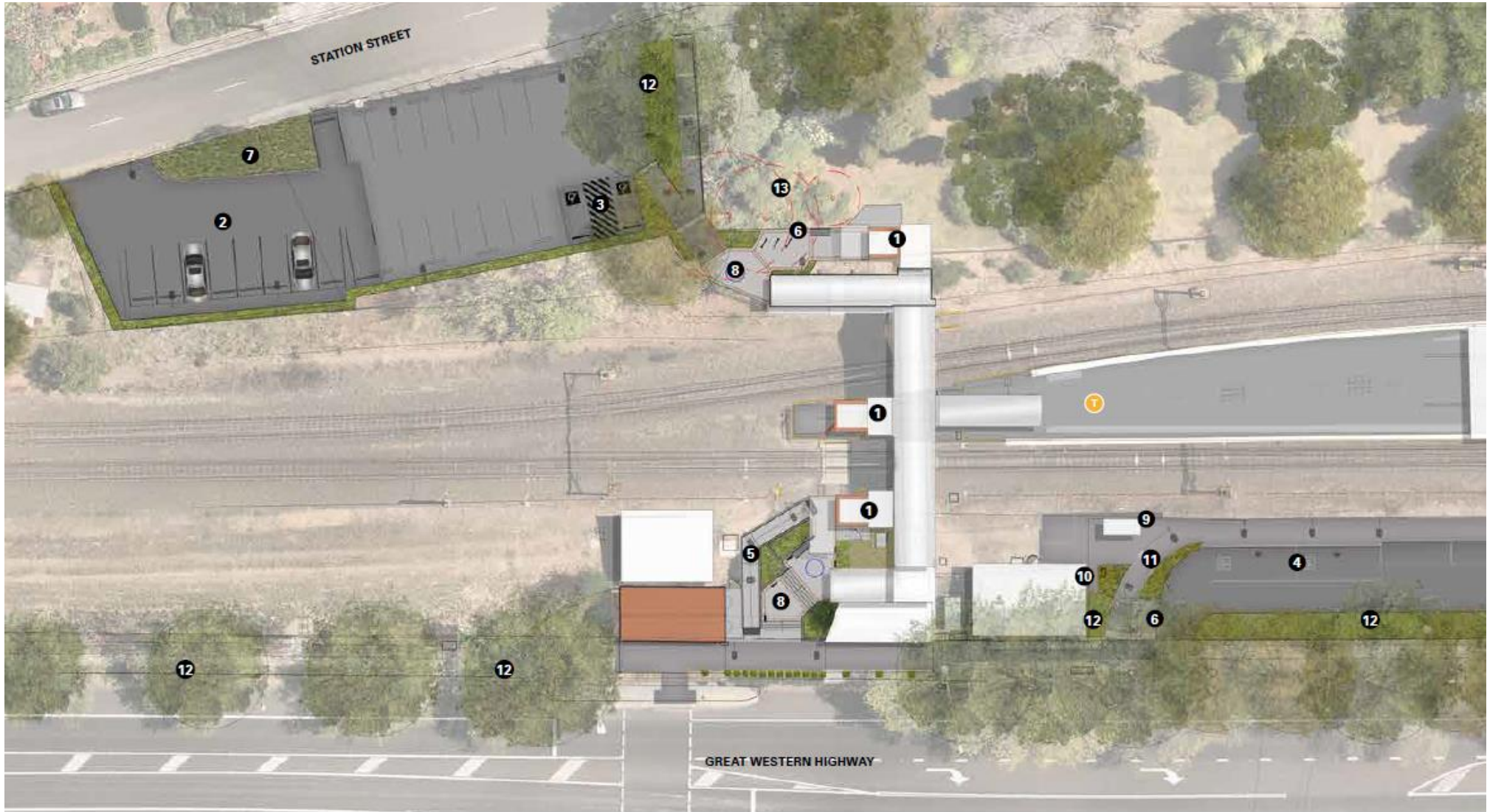
GHD Pty Ltd
 Level 8, 180 Lonsdale Street
 Melbourne VIC 3000
 T 61 3 8687 8000 E melmail@ghd.com.au W www.ghd.com

Appendix B

Artistic Impression and Landscape Plan



Artist's representation of the Proposal from the Great Western Highway entry plaza by DesignInc, looking west (Indicative only, subject to detailed design)



- | | | | | |
|---------------------------------|----------------------------|-------------------------------|---------------------------------|-------------------------------------|
| 1 Proposed lifts and canopies | 4 Kiss and Ride spaces | 7 Proposed bioretention basin | 10 Relocated secure bike locker | 12 Existing planting to be retained |
| 2 Proposed carpark extension | 5 Proposed accessible ramp | 8 Proposed entry forecourt | 11 Regraded accessible ramp | 13 Trees to be removed and offset |
| 3 Proposed DDA compliant spaces | 6 Proposed bike hoops | 9 Proposed seat and shelter | | |

Extract from the DesignInc Landscape Plan showing the Proposal, January 2022



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