NSW GOVERNMENT

Transport Access Program
Glenbrook Station Upgrade
Determination Report

Artist's impression of Glenbrook Station Upgrade, indicative only, subject to detailed design

December 2018

Glenbrook Station Upgrade Determination Report

Transport Access Program
Ref 6190170

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Glossary and abbreviations

Term	Meaning
BMCC	Blue Mountains City Council
BMCS	Blue Mountains Conservation Society
CoA	Condition of Approval
CCTV	Closed Circuit Television
Concept design	The concept design is the preliminary design presented in the REF, which would be refined by the Construction Contractor (should the Proposal proceed) to a design suitable for construction (subject to TfNSW acceptance).
Contractor	The Construction Contractor for the Proposed Activity would be appointed by TfNSW to undertake the detailed design and construction of the Proposed Activity
CPTED	Crime Prevention Through Environmental Design
DDA	*Disability Discrimination Act 1992* (Cwlth)
Detailed design	Detailed design broadly refers to the process that the Contractor undertakes (should the Proposal proceed) to refine the concept design to a design suitable for construction (subject to TfNSW acceptance).
DSAPT	*Disability Standards for Accessible Public Transport (2002)*
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000* (NSW)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cwlth)
Infrastructure SEPP	*State Environmental Planning Policy (Infrastructure) 2007* (NSW)
NES	Matters of 'National Environmental Significance' under the EPBC Act
Proponent	A person or body proposing to carry out an activity under Division 5.1 of the EP&A Act – in this instance, TfNSW
Proposed Activity	The construction and operation of the Glenbrook Station Upgrade
REF	Review of Environmental Factors
SES	The State Emergency Service of New South Wales
TCP	Traffic Control Plan
TfNSW	Transport for NSW (the Proponent)
TMP	Traffic Management Plan

Executive summary

Overview of Proposed Activity

Transport for NSW (TfNSW) is responsible for improving the customer experience of transport services, transport policy and regulation, planning and program administration, procuring transport services, and infrastructure and freight.

TfNSW is the proponent for the Glenbrook Station Upgrade (the 'Proposed Activity'), which is part of the Transport Access Program. The program is a NSW Government initiative to provide a better experience for public transport customers by delivering accessible, modern, secure and integrated transport infrastructure. This project aims to improve easy access to the station for people who have a disability, limited mobility, parents with prams and customers with luggage.

The Proposed Activity involves installation of a new lift on the platform linking to the existing footbridge, new stairs and a new accessible entrance ramp, installation of a new family accessible toilet and a new ambulant toilet, weather protection canopies, provision of a new formalised kiss and ride on Burfitt Parade and an accessible parking space, footpath and kerb improvements and the installation of a new electrical transformer.

The Proposal also includes ancillary works including installation of lighting, fencing, seating adjustments, security improvements, wayfinding signage and installation of tactile ground surface indicators. The improvements would assist in supporting public transport use and would provide an improved customer experience for existing and future users of the station.

TfNSW, as the proponent for the Proposed Activity, commissioned RPS to prepare a Review of Environmental Factors (REF) on behalf of TfNSW, which details the scope of works and environmental impacts associated with the Proposed Activity. The REF was prepared in accordance with the requirements of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and clause 228 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation).

Modifications to the Proposed Activity

Further design development, along with consultation with the community and stakeholders, has resulted in a number of changes since the Glenbrook Station Upgrade REF was prepared. These include:

- reduction in works to the interior of the station building
- adjustments to the alignment of the new accessible path resulting in a slightly narrower footprint and a reduction in tree removal
- changes to the three kiss and ride spaces proposed on Burfitt Parade to instead accommodate one accessible parking space and one kiss and ride space.
- revised construction compound and new laydown area.

The impacts associated with the design refinements have been considered in accordance with clause 228 of the EP&A Regulation (refer to Chapter 3 and Appendix C to Appendix F).

Should further design modifications be required as a result of the detailed design process, these modifications would be assessed to determine consistency with the Approved Project, including significance of impact on the environment. Additional mitigation measures and/or consultation would be undertaken where necessary.

Purpose of this report

The purpose of this Determination Report is for TfNSW, as the Proponent of the Glenbrook Station Upgrade, to comply with its obligations under Division 5.1 of the EP&A Act and determine whether or not to proceed with the carrying out of the Proposed Activity. TfNSW must make a determination in accordance with the provisions of Division 5.1 of the EP&A Act.

Conclusion

Based on the assessments in the REF and the Determination Report, along with a review of the submissions received from the community and other stakeholders, it is recommended that the Proposed Activity be approved, subject to the mitigation measures included in the REF and the Conditions of Approval. TfNSW will continue to liaise with the community and other stakeholders as the Proposed Activity progresses through detailed design and into the construction phase.

1 Introduction

1.1 Background

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

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

The Transport Access Program has been established to provide a better experience for public transport customers across the State by ensuring infrastructure improvements are delivered in a co-ordinated and integrated way. The Transport Access Program ensures the integrated planning and delivery of works with the aim of providing:

- stations that are accessible to those with disabilities, limited mobility, parents/carers with prams and customers with luggage
- modern buildings and facilities that meet the needs of a growing population
- modern interchanges that support an integrated network and allow seamless transfers between transport modes for all customers
- safety improvements including extra lighting, lift alarms, fences and security measures for car parks and interchanges, including stations, bus stops and wharves
- signage improvements so customers can more easily use public transport and transfer between modes at interchanges
- other improvements and maintenance such as painting and new fencing

TfNSW is the proponent for the Glenbrook Station Upgrade (referred to as the 'Proposed Activity' for the purposes of this document). The Proposed Activity includes the installation of a new lift on the platform linking to the existing footbridge, new stairs and a new accessible entrance ramp, installation of accessible toilet facilities and an accessible parking space.

The Proposed Activity would ensure that Glenbrook Station would meet legislative requirements under the Commonwealth *Disability Discrimination Act 1992* (DDA) and the *Disability Standards for Accessible Public Transport 2002* (DSAPT).

1.2 Review of Environmental Factors

A Review of Environmental Factors (REF) was prepared by RPS, on behalf of TfNSW, in accordance with Division 5.1 of the *Environmental Planning and Assessment 1979* (EP&A Act), and clause 228 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation), to ensure that TfNSW takes into account to the fullest extent possible, all matters affecting or likely to affect the environment as a result of the Proposed Activity. A link to the REF is included in Appendix A.

The Glenbrook Station Upgrade REF was placed on public display from 12 November to 26 November 2018, with 21 submissions received, including one submission from Blue Mountains City Council (BMCC) and one submission from the Blue Mountains Conservation Society (BMCS). Issues raised in these submissions are addressed in Chapter 2 of this report.

1.3 Determination Report

Prior to carrying out the Proposed Activity, the Secretary for TfNSW must assess and determine the Proposed Activity in accordance with Part 5, Division 5.1 of the EP&A Act (refer Figure 1).

Figure 1: Planning approval process

The purpose of this Determination Report is to address the following to allow for a determination of the Proposed Activity:

- examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the Proposed Activity – such matters are detailed in the environmental impact assessment (and any proposed modifications, as detailed and assessed in this Determination Report)
- identify mitigation measures to minimise potential environmental impacts
- determine whether potential environmental impacts are likely to be significant
- address whether the provisions of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) apply to the Proposed Activity.

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

a) to plan for a transport system that meets the needs and expectations of the public

b) to promote economic development and investment

c) to provide integration at the decision-making level across all public transport modes

d) to promote greater efficiency in the delivery of transport infrastructure projects

e) to promote the safe and reliable delivery of public transport and freight services.

1.4 Description of the Proposed Activity in the REF

The Proposed Activity would include works to Glenbrook Station and the surrounding interchange area located in the Blue Mountains Local Government Area. The station is located in the suburb of Glenbrook located about 67 kilometres west of the Sydney Central Business District.

Glenbrook Station and the surrounding interchange area do not currently meet key requirements of the *Disability Standards for Accessible Public Transport 2002* (DSAPT) or the Commonwealth *Disability Discrimination Act 1992* (DDA).

The Proposed Activity would provide safe and equitable access to the station platform and the surrounding pedestrian network and would improve customer facilities and amenity. The improvements would in turn assist in supporting public transport use and would provide an improved customer experience for existing and future users of the station.

An overview of the Proposed Activity, which is the subject of the Glenbrook Station Upgrade REF, is provided in the Executive Summary with full details set out in Chapter 3 of the REF.

In summary, the Proposed Activity as outlined in the REF comprises:

- installation of a new lift on the platform to provide access to the existing footbridge (footbridge and stairs to the platform are to be retained)
- provision of a new station entrance which would include removal of the existing (non-compliant) ramp from the footbridge to Burfitt Parade to be replaced with new stairs and a new accessible path from the existing footbridge extending east to the raised pedestrian crossing
- landscaping around the station entrance
- internal reconfiguration of the station building to allow for a new Family Accessible Toilet, a new ambulant toilet, communications and staff facilities
- installation of an external glass canopy at the entrance to the Family Accessible Toilet to provide weather protection

- new formalised kiss and ride on Burfitt Parade
- installation of a pad mount electrical transformer adjacent to the new stairs
- ancillary works including lighting, fencing, new bin storage, minor drainage works, seating adjustments, improvement to station communication systems (including CCTV cameras), hearing loops, installation of wayfinding signage and other signage to identify existing and new accessible features including installation of new tactile ground surface indicators (TGSIs).

The need for, and benefits of the Proposed Activity are outlined in Chapter 2 of the REF.

Construction is expected to commence in early 2019 and take around 12 months to complete.

2 Consultation and assessment of submissions

2.1 REF public display

The Glenbrook Station Upgrade REF was placed on public display from 12 November to 26 November 2018 at three locations, as well as placement of information on the TfNSW corporate[1] and yoursay[2] websites.

Community consultation activities undertaken for the public display included:

- two pop-up stalls at Glenbrook Station to allow customers and community members to speak with the project team, from 4pm – 6pm on 15 and 20 November 2018
- public display of the REF at BMCC Lower Mountains Office (104 Macquarie Road Springwood), Blaxland Library (33 Hope Street Blaxland), and the Transport for NSW Office at Level 5, Tower A, Zenith Centre, 821 Pacific Highway, Chatswood
- placement of an advertisement in local newspapers, Blue Mountains Gazette and Penrith Press on 14 November 2018 outlining the scope of the Proposed Activity, information on where to view the REF and specialist studies on the TfNSW website, along with details on how to make a submission
- placement of information on the TfNSW corporate and yoursay websites and NSW Government Have Your Say website
- 200 flyers handed out at the Station and 1,400 delivered to local businesses and residents
- signage erected around the station precinct
- a letter outlining the scope of the Proposed Activity, information on where to view the REF and specialist studies on the TfNSW website, along with details on how to make a submission was sent to BMCC (as per the consultation requirements under clauses 13, 14 and 15 of the Infrastructure SEPP) and the State Emergency Service (as per clause 15AA of the Infrastructure SEPP).

2.2 REF submissions

A total of 21 submissions were received by TfNSW, including one from BMCS (No. 12 in Table 1), one from BMCC which is addressed in Table 2, and one from the NSW State Emergency Service (SES) which is addressed in Table 3. Submissions included feedback on a range of issues in relation to the Proposed Activity. The key issues raised in submissions were:

- need for more parking at the station, parking in the surrounding local streets and access from the western car park to the station
- removal of trees which are part of endangered ecological communities
- access to public toilets at the station
- location and size of the kiss and ride
- heritage and visual impacts.

[1] http://www.transport.nsw.gov.au/projects-tap
[2] yoursay.transport.nsw.gov.au/Glenbrook

2.3 Consideration and response to submissions

Community submissions

A summary of all issues raised and associated responses is provided in Table 1.

Table 1: Response to community submissions received

No.	Submission no.	Issue/s raised	TfNSW response
1	**General**		
1.1	GLBK002 GLBK003, GLBK004, GLBK005, GLBK010, GLBK012, GLBK014, GLBK017, GLBK019	Support for the Proposal. Some submissions noted that customers have had to drive to other stations such as Blaxland and Penrith to access stations.	Noted.
1.2	GLBK010	Website information on how to give feedback was unhelpful.	Details on how to make a submission were included on the project website, yoursay and haveyoursay websites. TfNSW will review the layout and content for future proposals.
2	**Design**		
2.1	GLBK010	Will the new accessible path be designed so that it is suitable for the elderly and disabled?	The new accessible path has been designed to ensure compliance with the DDA legislation and DSAPT standards. This means that the path would adhere to the relevant standards in all aspects including slope/gradient.
2.2	GLBK019	Will additional opal card readers be installed near the lift?	An additional opal card reader would be installed near to the lift.

No.	Submission no.	Issue/s raised	TfNSW response
3	**Traffic**		
3.1	GLBK002, GLBK004, GLBK007, GLBK016, GLBK019	There should be a lift installed in the eastern and/or western car park(s) as it is more convenient to drop off people away from the road (Burfitt Parade). Access from the western car park would spread out the flow of commuters more evenly both in access to the station and on the trains themselves.	The location of the lift was selected so that it could be integrated with the existing footbridge at the primary pedestrian entrance in accordance with the requirements of the DSAPT. This also allowed the footbridge to be retained, minimising potential impacts to the heritage character of the station. In addition, the proposed lift location allows for a more direct path of travel to existing and proposed accessible parking. A lift located closer to the car park at the western end of the platform is not reasonable or feasible as the western car park is not the principal pedestrian entrance. Additionally, it would not be possible to construct a lift at this location due to space constraints associated with the narrow platform. An accessible entrance at the western end of the platform would also require an additional footbridge and lift that would result in additional heritage and visual impacts, along with a longer construction duration. The selection of the preferred option addressed all legislative access requirements whilst also taking into account environmental, social and economic factors.
3.2	GLBK004, GLBK006, GLBK009, GLBK017	More car parking should be built on the southern side of the rail line to the west of the station, and the Proposal should include direct access to the station from the car parks. Parking on the street in Glenbrook is currently problematic for rail customers and local residents as there is not enough parking in the area.	The focus of current Transport Access Program projects is to provide equitable access for customers with a disability and/or who are mobility impaired and includes provision for accessible parking. Additional parking at the station is outside of the scope of the Proposed Activity.
3.3	GLBK006	There has been poor traffic control in the area for previous construction projects and concerned this will be an issue for the Proposal.	A Construction Traffic Management Plan (CTMP) will be prepared by the Construction Contractor that will detail traffic control measures (refer to Condition of Approval 37 (CoA 37). Notifications will be distributed during construction to advise the community about any changes for pedestrians and vehicles. As part of the wider CEMP, the Construction Contractor would be responsible for ensuring the CTMP is implemented in accordance with the requirements of the Condition of Approval 37.

No.	Submission no.	Issue/s raised	TfNSW response
3.4	GLBK007, GLBK008	Queried the need for the Proposal when lifts could be accessed at other stations.	Glenbrook Station access does not currently meet key compliance requirements of the *Disability Standards for Accessible Public Transport* (DSAPT) or the Commonwealth *Disability Discrimination Act 1992* (DDA), which requires stations to be accessible to the wider community. A lift will provide equitable access for customers with a disability and/or who are mobility impaired.
3.5	GLBK007	The existing ramp should be kept and an additional ramp should be added.	The existing ramp is not DDA compliant as it is too steep and needs to be removed to accommodate the new compliant accessible path**.** Keeping both the accessible path and the existing ramp was not considered feasible as it would increase the construction footprint.
3.6	GLBK08, GLBK09	The kiss and ride should stay where it is currently. Moving the kiss and ride removes long term car parks and people will still use the current location.	The existing kiss and ride areas are being retained in their current location. The Proposed Activity would formalise a new kiss and ride on the northern side of Burfitt Parade in a safe area away from the existing bus zone.
3.7	GLBK13	Footpaths from the western car park to the station should be repaired and widened. Footpath improvements should be made on Glen Street. Additional footpaths should be installed on Glen Street and Cross Street.	The focus of current Transport Access Program projects is to provide equitable access for customers with a disability and/or who are mobility impaired. The accessible path would provide direct access from the principal pedestrian entrance to the platform. Footpath improvements outside the accessible path from the accessible parking spaces to the station is outside the scope of the Proposed Activity. Concerns regarding footpath improvements in the area surrounding the station will be sent as feedback to BMCC.
3.8	GLBK013	No stopping signs should be installed on Burfitt Parade between Ross Street and Glen Street.	The formalisation of a kiss and ride on Burfitt Parade would include installation of required signage. Additional street signage is outside the scope of the Proposed Activity comments regarding parking will be sent as feedback to BMCC.
3.9	GLBK015	Rail customers park in the kiss and ride zones all day. Burfitt Parade residents are impacted by parking activities. Will people be fined for leaving their cars on nature strips?	Noted. Parking infringements in the area surrounding the station are the responsibility of BMCC. This feedback will be provided to BMCC.

No.	Submission no.	Issue/s raised	TfNSW response
3.10	GLBK016	Pedestrian access should be provided from the eastern car park across the drainage line to Ross Street to provide access to the station and to the nearby shops.	The provision of an additional pedestrian access from Ross Street, across the drainage line, to the eastern car park was not considered as reasonable it does not provide a direct path to the primary pedestrian access point of the station. This feedback will be provided to BMCC.
3.11	GLBK017	Parking issues were noted with overflow from existing car parks filling any available parking on weekdays in local streets in particular Euroka Road. Note: it is often a one directional traffic flow and almost impossible with truck deliveries. Easier access to the station will encourage more commuters and exacerbate current parking issues.	The Proposed Activity would encourage greater public transport use by increasing public transport access, as required by the DDA, and includes an additional formalised kiss and ride that would provide customers with a safe place to access the station. Additional commuter parking at the station is outside of the scope of the Proposed Activity.
3.12	GLBK18	Traffic islands opposite the access point are too narrow especially on the southern side. The width of the road needs to increase by reducing the traffic island size.	Road widening works are outside the scope of the Proposed Activity. However, a road safety audit would be undertaken to ensure safe operation (refer Condition of Approval 39). The findings of the Road Safety Audit would be provided to BMCC for consideration.

No.	Submission no.	Issue/s raised	TfNSW response
4	**Heritage and visual amenity**		
4.1	GLBK007	The lift would be an intrusive visual element within the heritage character of the area. Impacts on the visual character may impact tourism.	A Visual Impact Assessment has been undertaken for the Proposed Activity (RPS,2018a). The visual impacts were assessed as ranging from negligible to moderate for most of the selected viewpoints except for Viewpoint 3 (No. 5B Burfitt Parade). Materials and finishes for the lift shaft have also been selected with consideration for the heritage setting and landscape character (e.g. a brick facade of similar colour to the brick of the existing heritage station building, with glass for the upper lift shaft to reduce visual impact). Further work has been undertaken during detailed design to ensure the new lift is designed in a manner sympathetic to the heritage values of the station. A heritage advisor would be engaged to provide ongoing heritage and conservation advice in accordance with Condition of Approval 23.
4.2	GLBK007	The lift should be located in the western car park to reduce visual and heritage impacts.	The location of the lift was selected so that it could be integrated with the existing footbridge at the primary pedestrian entrance in accordance with the requirements of the DSAPT. This also allowed the footbridge to be retained, minimising potential impacts to the heritage character of the station. A lift located closer to the car park at the western end of the platform is not reasonable or feasible as the western car park is not the primary pedestrian entrance. Additionally, it would not be possible to construct a lift at this location due to space constraints associated with the narrow platform. An accessible entrance at the western end of the platform would also require an additional footbridge and lift that result in additional heritage and visual impacts, along with higher construction costs and a longer construction duration. The selection of the preferred option addresses all legislative access requirements whilst also taking into account environmental, social and economic factors.
4.3	GLBK007, GLBK009	Recommend cladding the lift so that it matches the architecture of the station building.	Materials and finishes for the lift shaft have been selected with consideration for the heritage setting and landscape character (i.e. a brick facade of similar colour to the brick of the existing heritage station building, with glass for the upper lift shaft to reduce visual impact).
4.4	GLBK008	The artist's impression of the lift shows a large bush hiding most of the lift installation, why was the entire lift not shown?	Artist's impressions provide an indication of what the Proposed Activity may look like from key representative viewpoints once complete. The artist's impression of the lift (Figure 18 of the REF) shows a large shrub in front of the view of the lift, as it is not proposed to be removed, and so would provide some screening of the new lift at this location.

No.	Submission no.	Issue/s raised	TfNSW response
4.5	GLBK008	The artist's impression of the access path shows the large gum tree in the middle, but it is noted that this tree will have to be removed for the new access so why is this shown?	Every effort was made in the development of the photomontages to provide an indicative view of the station following the completion of the project. However, the ability to 'delete' vegetation from photomontages which occupy foreground positions within the original photograph is limited, as this would create a 'blank space'.
5	**Biodiversity**		
5.1	GLBK009, GLBK012 (BMCS)	Why are 31 trees being removed? The trees are part of a critically endangered community.	Minimising impacts to existing vegetation has been a fundamental consideration during design development. As stated in the REF, some tree removal would be required to facilitate construction of the new accessible path and transformer. As a result of ongoing design development, the shape of the path has been modified to reduce the impact on trees, with the number of trees likely to be removed being reduced to 24 (refer to Chapter 3 and Appendix F for more detail). While the trees form part of an endangered ecological community listed under State and Commonwealth legislation, a test of significance as required under the *Biodiversity Conservation Act 2016* and an assessment of significance under the *Environment Protection and Biodiversity Conservation Act 1999* were undertaken by qualified ecologists, which found that the Proposed Activity is not likely to have a significant impact on this vegetation. The offset for the removal of trees would be undertaken in accordance with the recommended mitigation measures from the REF and Condition of Approval 21.

No.	Submission no.	Issue/s raised	TfNSW response
5.2	GLBK012 (BMCS)	More options could have been explored in terms of the station upgrade to avoid the impacts on this critically endangered community - including consideration of a new pedestrian bridge at the same level as the existing footpath.	Options for alternate bridge locations were limited due to existing topography, platform widths, existing station building and platform gardens. A pedestrian bridge at the same level as the existing footpath was not considered to be feasible, as the station is located in a cutting and so would require a substantially higher footbridge and lift than proposed in the REF. This would require major structural changes to the existing heritage-listed footbridge and historic garden beds on the platform, resulting in an increase in visual and heritage impacts. This would also extend the construction timeframe. The selection of the preferred option addresses all legislative access requirements whilst also taking into account environmental, social and economic factors. The preferred option ensures that the existing heritage footbridge remains in use. As a result of ongoing design development, the number of trees likely to be removed has been reduced to 24 by amending the shape of the accessible path (refer to Appendix F for more detail).

No.	Submission no.	Issue/s raised	TfNSW response
5.3	GLBK012 (BMCS)	BMCS does not believe the proposed biodiversity offset of regenerating and enhancing the adjoining small corridor of native vegetation is sufficient. The Proposal will result in the permanent loss of 31 trees and over 400 square metres of native vegetation. Rehabilitating already existing native vegetation does not sufficiently offset the permanent decline of this already critically stressed vegetation community. This in fact represents a “net loss” of Sydney Turpentine Ironbark Forest.	TfNSW acknowledges the biodiversity values around the station. As part of ongoing design development, the number of trees likely to be removed has now been reduced to 24 (refer Chapter 3 and Appendix F for more information). While the trees and vegetation form part of an endangered ecological community listed under State and Commonwealth legislation, a test of significance as required under the *Biodiversity Conservation Act 2016* and an assessment of significance under the *Environment Protection and Biodiversity Conservation Act 1999* were undertaken by qualified ecologists, which found that the Proposed Activity is not likely to have a significant impact on this vegetation. A Vegetation Management Plan would be prepared and implemented for a degraded patch of native vegetation located adjacent to the impact area in accordance with requirements of Condition of Approval 21. The Vegetation Management Plan would guide the bush regeneration measures required to enhance and improve the current biodiversity values of the regenerated patch and would combine weed management and supplementary plantings throughout most of this adjoining area. Supplementary plantings will use native species that form part of *Blue Mountains Shale Cap Forest in the Sydney Basin Bioregion* endangered ecological community. As detailed on page 28 of the REF, the efficacy of the recommended offset method was tested using the TfNSW Vegetation Offset Calculator and it was determined that the regeneration of the adjacent area would demonstrate an improved or maintained outcome.
5.4	GLBK015	Will the proposed kiss and ride take up even more of the National Park and wooded areas around the station?	The additional kiss and ride is proposed on the northern side of Burfitt Parade. Works required to create the new kiss and ride on Burfitt Parade are limited to linemarking on the existing road, new signs, and regrading the existing footpath. The amendments to the parking areas and the adjacent footpath are not anticipated to require any clearing of vegetation. Clearing of vegetation to allow for the accessible path, new stairs and electrical transformer is not in an area located within the Blue Mountains National Park.

No.	Submission no.	Issue/s raised	TfNSW response
6	**Construction impacts**		
6.1	GLBK009	Maintaining the garden beds at the station is important. The community would not want to lose the gardens.	The importance of the garden beds and the garden setting at Glenbrook has been taken into consideration during design development. The majority of the garden beds at the station would be retained and Condition of Approval 43 has been included to ensure these are protected during construction. It is anticipated two garden beds near the proposed lift would be impacted, and one garden bed from the northern side of the existing male toilets would be relocated to the western side of the station building (adjacent to the toilet privacy wall).
7	**Toilet facilities and staffing**		
7.1	GLBK01, GLBK04, GLBK07, GLBK09, GLBK14	Station staffed hours should be extended to cover busy times including morning and evening so that access can be provided to the station toilets. Closing the station facilities including proposed accessible toilets outside of these times restricts the use of these proposed new facilities.	Station staffing and access to waiting room and toilet facilities would continue to be the responsibility of NSW TrainLink/Sydney Trains. The management of the station is in accordance with their procedures and access to toilets during staffed hours is for safety and security reasons. TfNSW will provide feedback to NSW TrainLink/Sydney Trains about the availability of toilets.
7.2	GLBK004, GLBK007	Access to the station toilets should be provided via Opal Card during hours when the station is unmanned. Opal cards would provide identification and security cameras would also provide security. Station toilets could have a special key provided to people with disabilities.	Access to station amenities is the responsibility of NSW TrainLink/Sydney Trains. Suggestions regarding outside hours access will be provided to NSW TrainLink/Sydney Trains for their consideration.
8	**Other**		
8.1	GLBK004	Increased train security is needed especially at night.	Security on trains is the responsibility of NSW TrainLink/Sydney Trains and is outside the scope of the Proposed Activity. Feedback on train security will be provided to NSW TrainLink/Sydney Trains for their consideration.
8.2	GLBK006	Previous projects in the Glenbrook area have had poor quality workmanship and repairs to work have not been undertaken in defects liability periods.	Noted. The construction of the Proposed Activity would be undertaken by a suitably qualified Construction Contractor.

No.	Submission no.	Issue/s raised	TfNSW response
8.3	GLBK007	Money spent on this proposal would be better spent on disabled people in their own homes.	It is a requirement for Glenbrook Station to be made compliant with DDA legislation and DSAPT standards.
8.4	GLBK007	Metal seats are unusable in hot weather. Wooden seats are preferred.	New seating has been designed in accordance with Sydney Trains guidelines and would comprise an aluminium seat with a 'woodgrain' appearance.
8.5	GLBK014	The last refurbishment of the Glenbrook Station ladies toilet was not that long ago. The refurbishment did not include any space/facility to place bags or other belongings when using the toilet. Please install hooks or a table or similar.	This suggestion will be forwarded to NSW TrainLink/Sydney Trains for their consideration.
8.6	GLBK007	Recommend increasing community and inclusion efforts e.g. "placemaking" at the station or by installing charity donation boxes at the station.	The focus of current Transport Access Program projects is to provide equitable access for customers with a disability and/or who are mobility impaired, however a Public Domain Plan would be prepared which would consider placemaking (refer to Condition of Approval 41).

Other stakeholder submissions

Table 2 outlines issues raised by BMCC in their submission, along with TfNSW's response.

Table 2: Response to BMCC submission

Issue no. (BMCC Ref)	Issue/s raised	TfNSW response
1	**General**	
1.1 (Letter and G.11)	Strongly support the objectives and the key features of the Proposal. Council commends TfNSW for their ongoing improvements to universal access to train stations within the Blue Mountains.	Noted.
1.2 (G.1)	Asset ownership to be consistent with the BMCC/Sydney Trains Safety Interface Agreement.	Noted.
1.3 (G.7)	All related approvals to work on Council land must be obtained prior to works commencing.	TfNSW will continue to consult with BMCC with respect to access to land and other approvals required prior to works commencing.
1.4 (G10)	All new TfNSW assets should be contained within Sydney Trains boundary (new transformer).	The proposed electrical transformer, accessible path and lift would be located within the lot boundary of RailCorp/Sydney Trains land.
2	**Traffic transport and access**	
2.1 (G.2)	The Council requires an application under the Roads Act for any temporary occupation or work that takes place in, from or over Council's road reserve.	Section 138 of the *Roads Act 1993* requires consent from the relevant road authority for the carrying out of work in, on, or over a public road. However clause 5(1) in Schedule 2 of the *Roads Act 1993* states that public authorities (TfNSW) do not require consent for works on unclassified roads (i.e. Burfitt Parade). However, should any works be required on Council road reserves then a Road Occupancy Licence would be obtained from Council. TfNSW would undertake a road condition survey prior to commencement of works and carry out rectification works if required (refer Conditions of Approval 38 and 39).

Issue no. (BMCC Ref)	Issue/s raised	TfNSW response
2.2 (G.8, G.9, RWC.3)	Council does not support the temporary occupation of car parking spaces in the western carpark. A 2015/16 survey of the carpark found that the average occupancy rate for this location is at 99%, with little to no capacity for these parking spaces to be accommodated in the surrounding network. It is noted that during the construction phases there will be a loss of 10 parking spaces in western carpark. The contractors need to assess this loss and provide additional space within the near vicinity. Council should be consulted on this matter.	Due to space limitations around the station, the temporary occupation of a section of the western car park, owned and managed by RailCorp/Sydney Trains, is required to accommodate the site office, toilets and lay down etc. As a result of design development, the size of the compound has been revised and the associated impacts are considered in Chapter 3 and Appendix C. Measures to reduce potential impacts such as parking offsets would be considered further as part of the preparation and implementation of the Construction Traffic Management Plan to be prepared for the Proposed Activity (refer Condition of Approval 37).
2.3 (RWC.2)	There should be no adverse impacts on local business, taxis services and private property of access during the construction phases.	Section 6.6 of the REF considered community and socio-economic impacts associated with the Proposed Activity. Local business and residences may experience some construction noise, vibration, dust and visual impacts along with changed traffic and parking conditions. However, it is not anticipated that there would be any property access impacts to businesses or residences during the construction phase. A Community Liaison Management Plan would be prepared and implemented to keep businesses and residents informed (refer Condition of Approval 7). There may be potential benefits to businesses during the construction through the local purchase of goods and services. Measures to reduce potential impacts such as potential impacts to taxi services would be considered further as part of the preparation and implementation of the Construction Traffic Management Plan (CTMP) to be prepared for the Proposed Activity (refer to Condition of Approval 37).

Issue no. (BMCC Ref)	Issue/s raised	TfNSW response
2.4 (RWC.3)	Construction workers are to be instructed not to park in commuter parking spaces or villages parking areas. Contactors should be encouraged to carpool and use public transport.	TfNSW would investigate initiatives with the Construction Contractor to reduce impacts on parking during construction. Options that would be considered include: • encouraging the use of public transport • car-pooling • use of small shuttle buses to transport workers from a designated meeting point nearby to the worksite • reinforcement of appropriate parking behaviour at toolbox talks.
2.5 (T&P.3, T&P.4)	Consider the installation of formal bicycle parking. Bicycles are often chained onto the fence on Ross Street and Burfitt Parade as no bicycle parking other than prepaid bicycle lockers are available. This will be a hazard to users on the proposed upgraded footpath on Burfitt Parade. Reference should be made to *the Blue Mountains Bike Plan 2020* and *Pedestrian Access and Mobility Plan 2025* which demonstrates the local network connections with the Railway Station and the surrounding villages and townships.	The focus of current Transport Access Program projects is to provide equitable access for customers with a disability and/or who are mobility impaired. Bicycle parking requirements are being investigated by TfNSW as part of a separate active transport strategy.
2.6 (T&P.5)	The REF and supporting documentation incorrectly states that no formal kiss and ride facilities are provided. Two existing dropoff/ pick-up zones are provided on both sides of Burfitt Parade which provide six car spaces, and have been in place in excess of 10 years. Clarification is required on the function, signposting, and justification of a new kiss and ride zone, including capacity and demand surveys, and route choice changes.	In addition to the existing kiss and ride, the Proposed Activity would provide an additional formalised kiss and ride area with appropriate signage. Further information will be provided to BMCC as it is available.
2.7	Design should consider realigning the existing pedestrian refuge to better connect to the proposed stair access and resulting pedestrian desire line across Burfitt Parade.	The location of the existing stairs is not in alignment with the pedestrian refuge. The proposed location of the stairs is an improvement on this alignment. Amendments to the pedestrian refuge do not form part of the accessible path to the station/between interchange facilities, and so are outside the scope of the Proposed Activity.

Issue no. (BMCC Ref)	Issue/s raised	TfNSW response
2.8	No formal taxi zone is provided at the station. An informal taxi zone is located on the southern side of Burfitt Parade east of Ross Street. The bus shelter on Burfitt Parade is used by taxi customers to wait for taxis.	Noted.
2.9 (T&P.9)	All line marking to have relevant raised pavement markers (RPMs)	Line marking would be designed and implemented in accordance with relevant codes and standards.
2.10 (T&P.10)	Provisions for on road cyclists should be included in the design particularly at intersections between car parks and local road.	The focus of current Transport Access Program projects is to provide equitable access for customers with a disability and/or who are mobility impaired. Provisions for on-road cyclists are outside the scope of the Proposed Activity.
3	**Heritage value, landscape character, urban design and visual amenity**	
3.1 (G.3)	Measures to provide deterrents to minimise graffiti on the proposed infrastructure should be identified.	The detailed design of the Proposed Activity has been undertaken as per the design standards listed in Section 3.1.3 of the REF, which includes CPTED considerations in addition to CCTV and lighting upgrades to affected parts of the station. Graffiti measures during the construction and operation period are included as Conditions of Approval 41 and 42, respectively. Ongoing graffiti management would be the responsibility of Sydney Trains/NSW TrainLink.
3.2 (UDL.1)	Artist impressions from Burfitt Parade included in the REF and promotional material is highly misleading as it does not accurately depict the loss of mature vegetation, specifically tree number 26.	Every effort was made in the development of the photomontages to provide an indicative view of the station following the completion of the project. However, the ability to 'delete' vegetation from photomontages which occupy foreground positions within the original photograph is limited, as this would create a 'blank space'.
3.3 (UDL.2)	Council notes and supports the new lift and stair structure which features a low line design. Council has a preference for less bulk and maximum transparency in design features. Council would like to provide input on the roof colour.	BMCC has been offered a briefing for this project during design development. Further consultation will be undertaken in relation to direct impacts on council owned and operated assets (refer to Section 2.4).

Issue no. (BMCC Ref)	Issue/s raised	TfNSW response
3.4 (UDL.3)	Council needs to see more detailed information on proposed finishes and materials before it can comment in detail on visual impacts.	BMCC has been offered a briefing for this project during design development. Further consultation will be undertaken in relation to direct impacts on council owned and operated assets (refer to Section 2.4).
3.5 (UDL.4)	Reference should be made to Council's Public Domain Technical Manual.	Council's Public Domain Technical Manual will be considered when preparing the Public Domain Plan for the proposal (refer to Condition of Approval 41).
3.6 (UDL.5)	Reference should be made to Council's Street Tree Master Plan.	Council's Street Tree Master Plan will be considered when preparing the Public Domain Plan for the proposal (refer to Condition of Approval 41).
3.7 (HLC.1)	Council has concerns around potential impacts on the heritage, visual, physical and landscape fabric of the station platform and its curtilage.	Opportunities to reduce potential heritage, visual and landscape impacts have been investigated during detailed design in consultation with a heritage advisor in accordance with Condition of Approval 23.
3.8 (HLC.2)	Glenbrook Station is listed on the RailCorp (Sydney Trains) Section 170 Heritage and Conservation Register and is also listed as a local heritage item – G011 in Schedule 5 of the *Blue Mountains Local Environment Plan 2015*. Of specific note within the Section 170 heritage listing is the station building and the landscaping on the station platform which has been recorded as an award winning and characteristic feature of the station in the past.	The heritage significance of Glenbrook Station is recognised and this information was considered as part of the REF and supporting Statement of Heritage Impact.
3.9 (HLC.3)	The platform gardens, as recorded in the Section 170 heritage listing are a unique characteristic of Glenbrook Station. Minimising the impacts to the platform gardens needs further consideration.	The importance of the garden beds and the garden setting at Glenbrook has been taken into account during design development. The majority of the garden beds at the station would be retained. Condition of Approval 43 has been included to ensure these are protected during construction.
3.10 (HLC.4)	Council has concerns over the statement *"the Proposal would have a negligible to moderate visual impact on the majority of people living, working in or travelling through the landscape surrounding Glenbrook Station during operation….."*. Council requires further engagement on these matters.	BMCC has been offered a briefing for this project during design development. Further consultation will be undertaken in relation to direct impacts on council owned and operated assets (refer to Section 2.4).

Issue no. (BMCC Ref)	Issue/s raised	TfNSW response
3.11 (HLC.5)	A landscape plan highlighting planting and streetscape design should be prepared in alignment with the civil design, with the intent to provide some integration between the new Proposal elements and the existing / planned landscape character. Council requires further engagement on these matters.	A Landscape Plan has been developed for the Proposed Activity. There have been opportunities for BMCC to provide further feedback during the preparation of this plan.
3.12 (HLC.6)	It is noted that a due diligence assessment was undertaken for the Proposal in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (OEH, 2010). An Aboriginal Heritage Information Management System (AHIMS) search was undertaken for the area covered by the Proposal (the area around Glenbrook Station) plus a 200 metre radius, on 10 July 2018. No Aboriginal sites were identified in the initial search. An additional search with an increased radius was subsequently undertaken which identified an Aboriginal site approximately 850 metres from the Proposal. This site would not be impacted by the Proposal.	Noted.
3.13 (HLC.7)	The detailed design and construction of the proposal should be undertaken with consideration to the heritage values of the station. In order to minimise impacts on the heritage fabric of the station. Council requires further engagement on these matters.	Opportunities to reduce potential heritage impacts have been investigated during detailed design in consultation with a heritage advisor in accordance with Conditions of Approval 23, 24 and 25.
4	**Drainage**	
4.1 (SD.1)	No drainage plans have been provided to allow review.	BMCC would be provided with additional design information once available.
4.2 (SD.2, SD.3, SD.4)	All drainage assets should be contained within Sydney Trains boundary including onsite detention. Clarification requested on proposed management of stormwater run-off generated from new paved areas. Council expects TfNSW to account for this in drainage design so as to not impact Council assets.	All new drainage infrastructure would be installed on RailCorp/Sydney Trains land. Existing stormwater assets have been assessed for capacity as part of detailed design. Stormwater and drainage arrangements would be confirmed during further consultation with BMCC.
4.3	Reference should be made to the *Lapstone South, South Glenbrook and South Blaxland Flood risk Management Study and Plan.* Further information can be provided by Council if required.	Civil and drainage works would consider all relevant studies, including the *Lapstone South, South Glenbrook and South Blaxland Flood risk Management Study and Plan*.

Issue no. (BMCC Ref)	Issue/s raised	TfNSW response
5	**Construction impacts**	
5.1 (G.5)	Glenbrook has a number of local events throughout the year that need to be considered, such as the Careflight Woodford to Glenbrook Classic, Australia Day celebrations, and the Glenbrook Spring Festival. Construction work should cease during these events and also consider crowds which attend on these days.	Condition of Approval 44 has been included to ensure that key events in Glenbrook would be taken into consideration during the construction planning process. Mitigation measures would be included in documents such as the CEMP and Community Liaison Management Plan to minimise impacts.
5.2 (RWC.1)	Reference should be made to the relevant Council Standards for kerb ramps/paths and other civil infrastructure.	Civil infrastructure has been designed in accordance with relevant codes and standards.
5.3 (G.6 and G.7)	A precondition survey should be undertaken of all infrastructure likely to be used and/or impacted by the project. Any impacts by construction activities on Council assets in the road reserve, such as unformed or formed footpaths, kerb & gutter, road shoulder or road pavements, will be the responsibility of TfNSW to make good.	TfNSW would undertake road and property condition surveys prior to commencement of works and carry out rectification works if required (refer Condition of Approval 34 and 38).
5.4 (T&P.1)	Council supports the proposed minimisation of impact to the local area around the proposed works including impacts to traffic, amenity, noise etc. This includes siting any necessary compounds, storage areas, staff car parking etc. away from residential properties.	Noted.
5.5 (T&P.2)	Council requests further details are provided once specifics of construction activities, such as compound locations and storage, construction staff parking and vehicle access have been detailed, so that potential impacts on local traffic and residents can be assessed.	Additional information would be provided by the contractor through road occupancy licence applications, project Traffic Management Plans or as requested by BMCC.
5.6 (T&P.7)	There is limited area available for a construction compound and use of a large crane would be required to lift construction materials and equipment to the station from Burfitt Parade. More detail around impact on local roads is required.	As a result of design development, the size of the compound has been revised and the associated impacts are considered in Chapter 3 and Appendix C. Traffic movements associated with cranes would be considered as part of the CTMP (refer to Condition of Approval 37).

Issue no. (BMCC Ref)	Issue/s raised	TfNSW response
5.7 (LRI.1)	It is noted that interchange facilities proposed are: • new line marking and signage to establish three kiss and ride spaces on the northern side of Burfitt Parade, adjacent to the eastern car park (not supported as noted previously) • upgrade of the existing footpath between the eastern car park and raised pedestrian crossing to achieve compliant grades • relocation of bin storage area • fencing adjustments and installation of new bollards.	The proposed location of the additional DDA space on the northern side of Burfitt Parade now means that there will be only one additional kiss and ride space (subject to compliance with relevant standards and a road safety audit, as per Condition of Approval 39). The proposed upgrade of the footpath will now be from the on-street accessible parking space only.
5.8 (LRI.2)	Proposal notes during construction would be minor and manageable subject to the preparation and activation of Construction Traffic Management Plans (CTMPs) that would be prepared as part of a broader Construction Environmental Management Plan (CEMP). These plans need to be provided to Council prior to work commencing.	Noted. Further consultation would occur with BMCC during finalisation of the CTMP and CEMP in accordance with Condition of Approval 12 and 37.
5.9 (E.1)	Council expects that rigorous site/ environmental management processes throughout the project and associated works will be employed and clearly conveyed to the construction and maintenance teams due to proximity to Blue Mountains World Heritage Area, National Park and water supply catchment.	A range of environmental management measures, including contractor inductions that would be used to promote awareness of the Blue Mountains World Heritage Area National Park and water supply catchment, would be included in the CEMP to be prepared for the Proposed Activity. Sensitive areas and no-go zones would be identified on Environmental Controls Map (ECM) (refer Conditions of Approval 12 and 14).

Issue no. (BMCC Ref)	Issue/s raised	TfNSW response
6	**Biodiversity**	
6.1	Offsetting planting and bush regeneration would be undertaken in the adjoining vegetation patch. This should be developed with Council.	A Vegetation Management Plan would be prepared and implemented in consultation with Council for a degraded patch of native vegetation located adjacent to the impact area in accordance with the mitigation measures in the REF and Condition of Approval 21.
6.2	Council is very concerned around the removal of around 31 trees and ground cover (an area of approximately 406 square metres) comprising Sydney Turpentine-Ironbark Forest (listed as a critically endangered ecological community (CEEC) under the EPBC Act). The assessment that the proposal is not likely to have a significant impact is concerning. Further engagement with Council and other community organisation such as the Blue Mountains Conservation Society should be completed.	There have been opportunities for engagement with BMCC during design development. While the trees form part of an endangered ecological community listed under State and Commonwealth legislation, a test of significance as required under the *Biodiversity Conservation Act 2016* and an assessment of significance under the *Environment Protection and Biodiversity Conservation Act 1999* were undertaken by qualified ecologists which found that the Proposed Activity is not likely to have a significant impact on this vegetation. Vegetation removed as part of the Proposed Activity would be offset by regeneration of the adjacent rail corridor area in accordance with the mitigation measures in the REF and Condition of Approval 21. Bush regeneration activities would be undertaken by qualified regeneration practitioners including community groups where appropriate. Any landscaping, outside land owned by RailCorp, including position and species suitability would be considered through the Public Domain Plan in consultation with BMCC and where appropriate relevant community stakeholders (refer Condition of Approval 41).
7	**Consultation**	
7.1 (G.4)	Council should be provided the opportunity to provide comment on the design at the preliminary stage and again at the 80% stage.	There have been opportunities for BMCC to provide feedback during design development and further consultation would only be undertaken in relation to direct impacts on council owned and operated assets (refer to Section 2.4).

Issue no. (BMCC Ref)	Issue/s raised	TfNSW response
7.2 (RWC.5)	Council notes that the timeframe for construction would be approximately 12 months and is dependent on track possession availability. Council should be given advance notice of commencement dates.	BMCC would be kept informed of construction commencement and provided with regular updates throughout construction, including notice of track possessions.

Table 3 outlines issues raised by BMCC in their submission, along with TfNSW's response.

Table 3: Response to NSW State Emergency Service submission

Issue no. (SES Ref)	Issue/s raised	TfNSW response
1.1 (ID935)	Although the station is flood prone, the proposed station upgrade does not contribute to increasing risk and therefore the NSW SES considers the development appropriate. However, any improvements that Transport for NSW can make to reduce any flood risk at the station will benefit the current and future community. The NSW SES encourages Transport for NSW to pursue, if relevant, site design and stormwater management that minimises any risk to the community.	Noted. A hydrological assessment has been undertaken during detailed design to consider stormwater, drainage design and potential flooding risks.
1.2 (ID935)	In addition, in managing the site in the future, the public authority (i.e. Transport for NSW) should ensure, people using the station are aware of the flood risk. An appropriate business emergency plan can assist in being prepared for, responding to and recovering from flooding and which may have relevant information to assist Transport for NSW in managing the site in the future. The NSW SES has a template which can assist in this process: http://www.sesemergencyplan.com.au/	This information will be passed on to Sydney Trains/NSW TrainLink with respect to the operational management of the station.

2.4 Future consultation

Should TfNSW proceed with the Proposed Activity, consultation activities would continue, including consultation with BMCC regarding design and construction activities. In addition TfNSW would notify residents, businesses and community members in the lead up to and during construction. The community engagement activities would help to ensure that:

- the community and stakeholders are notified in advance of any upcoming works, including changes to pedestrian or traffic access arrangements and construction activities outside standard construction hours
- accurate and accessible information is made available
- a timely response is given to enquiries and concerns raised by the community
- feedback from the community is encouraged.

The TfNSW email address[3] and TfNSW Infoline (1800 684 490) would continue to be available during the construction phase. Targeted consultation methods, such as use of letters, notifications, pop up stalls, signage and verbal communications, would continue to occur. The TfNSW website[4] would also include updates on the progress of construction.

[3] projects@transport.nsw.gov.au
[4] https://www.transport.nsw.gov.au/projects/current-projects/glenbrook-station-upgrade

3 Changes to the Proposed Activity

3.1 Assessment of design changes

Further design development, along with consultation with the community and stakeholders, has resulted in a number of changes since the Glenbrook Station Upgrade REF was prepared. These changes are outlined in Table 4, along with a discussion of the impacts (and unless explicitly stated otherwise in the table below, it is considered that impacts related to other aspects are considered to be consistent with the findings of the REF). Where additional mitigation measures are required, these have been included as Conditions of Approval in Appendix B.

Table 4: Design changes summary of impacts

Aspect of the Proposal	Design change	Discussion of impacts
Station building	There would be a reduction in works to the station building (refer to Figure 2): • proposed works located within the 'comms/staff amenities' and 'staff room' are no longer required as existing equipment racks will be utilised to house equipment • proposed door widening of the Family Accessible Toilet is not required, and the existing grill will be removed and replaced with a new solid door • a modern steel bookcase would be removed from the 'store' building.	The changes relate to potential heritage impacts and a heritage assessment has been completed by RPS (refer to Appendix F). The heritage assessment found that overall, the changes represent a reduction in impacts to heritage values (through avoiding direct impacts to heritage fabric) and amendments to the mitigation measures recommended in the Glenbrook Statement of Heritage Impact (RPS, 2018b). Consideration for the revised mitigation measures has been included in Conditions of Approval 23 and 24.
Accessible path	Adjustments to the alignment of the new accessible path would result in a slightly narrower footprint and a reduction in tree/vegetation removal (refer to Figure 3). This change has also allowed for the relocation of the bin storage area closer to the ramp.	An arborist assessment of the revised alignment of the access path has concluded that fewer trees would need to be removed due to the reduction in size of the ramp. Previously 31 trees were to be removed. With the proposed design changes, it is likely that only 24 trees would require removal. Refer to the arborist assessment in Appendix E for further detail.

Kiss and ride & new DDA space	The kiss and ride on the northern side of Burfitt Parade has been reduced to allow for the creation of an additional DDA parking space closer to the station entrance (refer to Figure 3). This is subject to the design being compliant with relevant standards and subject to a road safety audit (refer to Condition of Approval 39).	The changes to the kiss and ride would reduce the length (as assessed in the REF) from three spaces to one, to provide one space for accessible parking closer to the station. This represents a positive change with respect to accessible facilities, while still providing a formalised kiss and ride for the wider community. This change is not considered significant based on observations of existing user demand and the effect of change on safety and operations (subject to being designed in accordance with relevant standards and subject to a road safety audit, refer to Condition of Approval 39). For more information please refer to Appendix C for the Traffic and Transport Assessment.
Construction compound	Further construction planning has confirmed that the establishment of a construction compound now requires the temporary occupation of approximately 25 parking spaces to accommodate the site office, toilets, equipment (increased from 8-10 assessed in the REF); as well as a new laydown area south of the rail corridor (refer to Figure 4).	Additional assessment for traffic and noise has been undertaken by SLR to consider these changes (refer to Appendix C and Appendix D). To evaluate the impacts to parking and identify possible mitigation measures, SLR has undertaken a desktop parking accumulation assessment using Nearmap aerial imagery collected over a multi-year period since 2014 after which the western car park was constructed, and the surrounding parking situation has remained relatively consistent. The desktop assessment results indicate that, on average, there is sufficient on-street parking capacity to accommodate the proposed loss of the 25 spaces from the western car park. Condition of Approval 37 has been amended to address this impact, including provision to temporarily revise on-street parking regulations and to maximise opportunities for new on-street parking in the vicinity of the station during the construction period. The noise assessment confirmed that the revised construction compound would not result in increased noise emissions from the site, nor would it result in noise sources being located closer to nearby sensitive receivers. For the temporary laydown area, it is considered that while the trucks and excavators accessing the new area may be closer to nearby sensitive receivers than previously assessed, the worst-case construction noise impacts for all construction scenarios would be dominated by more noise intensive equipment. The mitigation measures presented in the REF assessment are therefore considered appropriate for the temporary laydown area.

Figure 2: Revised station building layout

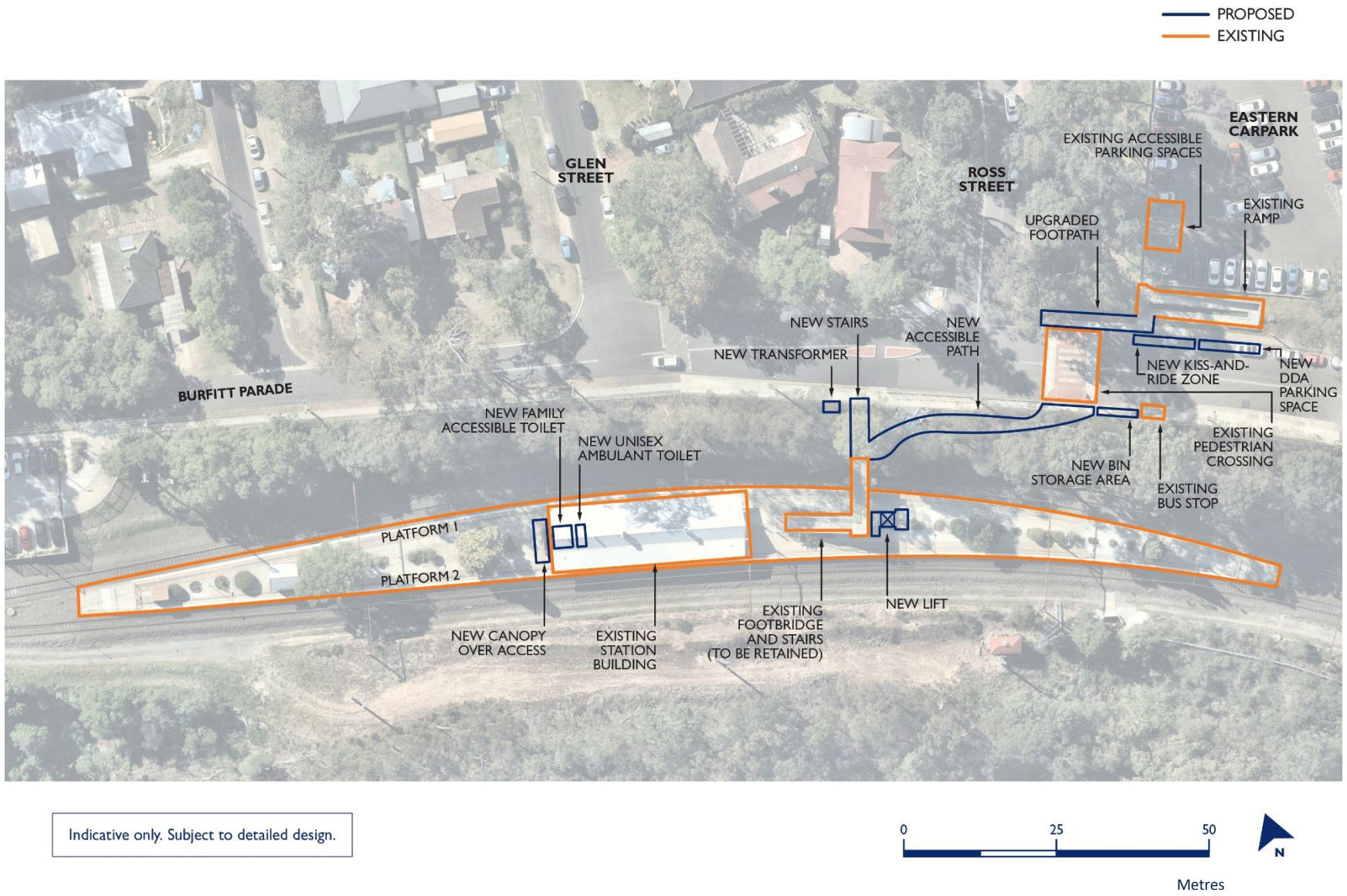


Figure 3: Revised key features of the Proposed Activity

Figure 4: Revised construction compound

4 Consideration of the environmental impacts

Environmental Planning and Assessment Act 1979

The REF and this Determination Report have been prepared to address the requirements of sections 5.5 and 5.7 of the EP&A Act.

In accordance with the checklist of matters pursuant to clause 228(3) of the EP&A Regulation, an assessment is provided in Chapter 6 and Appendix B of the REF. While the changes (as described in Chapter 3 of this Determination Report) would in some instances provide a reduced impact with respect to biodiversity and heritage than the impacts as assessed in the REF, there would also be an increase to the temporary impacts associated with parking loss. On balance, the conclusions of the clause 228 assessment remain consistent.

In respect of the Proposed Activity an assessment has been carried out regarding potential impacts on critical habitat, threatened species, populations or ecological communities or their habitats, under section 5.7 of the EP&A Act.

The likely significance of the environmental impacts of the Proposed Activity has been assessed in accordance with the then NSW Department of Planning's 1995 best practice guideline *Is an EIS Required?*[5] It is concluded that the Proposed Activity is not likely to significantly affect the environment (including critical habitat) or threatened species, populations of ecological communities, or their habitats. Accordingly, an environmental impact statement under Division 5.2 of the EP&A Act is not required.

Environment Protection and Biodiversity Conservation Act 1999

As part of the consideration of the Proposed Activity, all matters of national environmental significance (NES) and any impacts on Commonwealth land for the purposes of the EPBC Act have been assessed. In relation to NES matters, this evaluation has been undertaken in accordance with Commonwealth Administrative Guidelines on determining whether an action has, will have, or is likely to have a significant impact. A summary of the evaluation is provided in Chapter 6 and Appendix A of the REF, and the conclusions of this assessment remain unchanged as a result of the design changes (as described in Chapter 3).

It is considered that the Proposed Activity described in the REF is not likely to have a significant impact on any Commonwealth land and is not likely to have a significant impact on any matters of NES.

[5] Refer to the National Library of Australia's 'Trove' website http://trove.nla.gov.au/work/7003034?selectedversion=NBD11474648

5 Conditions of Approval

If approved, the Proposed Activity would proceed subject to the Conditions of Approval included in Appendix B.

6 Conclusion

Having regard to the assessment in the REF and consideration of the submissions received and the design changes subsequent to the public display of the REF as detailed in this Determination Report, it can be concluded that the Proposed Activity is not likely to significantly affect the environment (including critical habitat) or threatened species, populations of ecological communities, or their habitats. Consequently, an environmental impact statement is not required under Division 5.2 of the EP&A Act.

It is also considered that the Proposed Activity does not trigger any approvals under Part 3 of the EPBC Act.

The Proposal would provide a series of benefits to the community including:

- a station that is more accessible to customers with a disability, limited mobility and parents with prams in line with DSAPT and DDA requirements
- improved and equitable access to Glenbrook Station for customers through the installation of a lift, accessible pathway and accessible parking space
- improved station amenity and safety for customers at the station resulting from the installation of accessible toilet facilities, new lighting and CCTV.

The environmental impact assessment (REF and Determination Report) is recommended to be approved subject to the proposed mitigation and environmental management measures included in the Conditions of Approval (refer Appendix B).

Environmental Impact Assessment Determination

GLENBROOK STATION UPGRADE

APPROVAL

I, LOUISE SUREDA, as delegate of the Secretary, Transport for NSW:

1. Have examined and considered the Proposed Activity in the Glenbrook Station Upgrade Review of Environmental Factors (November, 2018) and the Glenbrook Station Upgrade Determination Report (December, 2018) in accordance with section 5.5 of the *Environmental Planning and Assessment Act 1979*.

2. Determine on behalf of Transport for NSW (the Proponent) that the Proposed Activity may be carried out in accordance with the Conditions of Approval in this Determination Report (December, 2018), consistent with the Proposal described in the Glenbrook Station Upgrade Review of Environmental Factors (November, 2018), as amended by this Determination Report (December, 2018).

Louise Sureda
Director Planning and Environment
Infrastructure and Place
Transport for NSW
Date: 20·12·18

References

RPS, 2018a. *Glenbrook Station Upgrade – Visual Impact Assessment*, RPS Sydney

RPS, 2018b. *Glenbrook Station Upgrade - Statement of Heritage Impact*, RPS Sydney

TfNSW, 2016, *Vegetation Offset Guide*, Sydney

Appendix A Review of Environmental Factors

Please refer to the TfNSW website to access the Glenbrook Station Upgrade REF:
https://www.transport.nsw.gov.au/projects/current-projects/glenbrook-station-upgrade

Appendix B Conditions of Approval

CONDITIONS OF APPROVAL

Glenbrook Station Upgrade

Note: these conditions of approval must be read in conjunction with the final mitigation measures in the Glenbrook Station Upgrade Review of Environmental Factors.

Schedule of acronyms and definitions used:

Acronym	Definition
ADEIA	Associate Director Environmental Impact Assessment (or nominated delegate)
ADEM	Associate Director Environmental Management (or nominated delegate)
ADSPD	Associate Director Sustainability, Planning & Development (or nominated delegate)
CECR	Construction Environmental Compliance Report
CEMP	Construction Environmental Management Plan
CLMP	Community Liaison Management Plan
CoA	Condition of Approval
dBA	Decibels (A-weighted scale)
ECM	Environmental Controls Map
EIA	Environmental Impact Assessment
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence issued by the Environmental Protection Authority under the *Protection of the Environment Operations Act 1997*
EMS	Environmental Management System
OEH	NSW Office of Environment and Heritage
OOHWP	Out of Hours Works Protocol
PCSR	Pre-Construction Sustainability Report
PDP	Public Domain Plan
PECM	Pre-Construction Environmental Compliance Matrix
POCR	Pre-Operational Compliance Report
RBL	Rating Background Level
RNP	*NSW Road Noise Policy* (Department of Environmental, Climate Change and Water, 2011)
TfNSW	Transport for NSW
TMP	Traffic Management Plan

Acronym	Definition
UDP	Urban Design Plan

Term	Definition
Construction	Includes all work in respect of the Project, other than survey, acquisitions, fencing, investigative drilling or excavation, building/road dilapidation surveys, or other activities determined by the TfNSW ADEM to have minimal environmental impact such as minor access roads, minor adjustments to services/utilities, establishing temporary construction compounds (in accordance with this approval), or minor clearing (except where threatened species, populations or ecological communities would be affected, unless otherwise agreed by the ADEM).
Contamination	The presence in, on or under land of a substance at a concentration above the concentration at which the substance is normally present in, on or under (respectively) land in the same locality, being a presence that presents a risk of harm to human health or any other aspect of the environment.
Designated Works	Includes tunnelling, blasting, piling, excavation or bulk fill or any vibratory impact works including jack hammering and compaction, for Construction.
Emergency Work	Includes works to avoid loss of life, damage to external property, utilities and infrastructure, prevent immediate harm to the environment, contamination of land or damage to a heritage (indigenous or non-indigenous) item.
Environmental Impact Assessment (EIA)	The documents listed in Condition 1 of this approval.
Feasible	A work practice or abatement measure is feasible if it is capable of being put into practice or of being engineered and is practical to build given project constraints such as safety and maintenance requirements.
Noise Sensitive Receiver	In addition to residential dwellings, noise sensitive receivers include, but are not limited to, hotels, entertainment venues, pre-schools and day care facilities, educational institutions (e.g. schools, TAFE colleges), health care facilities (e.g. nursing homes, hospitals), recording studios, places of worship/religious facilities (e.g. churches), and other noise sensitive receivers identified in the environmental impact assessment.
Project	The construction and operation of the Glenbrook Station Upgrade as described in the Environmental Impact Assessment.
Proponent	A person or body proposing to carry out an activity under Part 5, Division 5.1 of the EP&A Act – in the case of the Project, Transport for NSW.
Reasonable	Selecting reasonable measures from those that are feasible involves making a judgment to determine whether the overall benefits outweigh the overall adverse social, economic and environmental effects, including the cost of the measure.

CoA number	Type
	General
1	**Terms of Approval** The Project shall be carried out generally in accordance with the environmental impact assessment (EIA) for this Project, which comprises the following documents: a) *Glenbrook Station Upgrade – Review of Environmental Factors*, (RPS, November 2018) b) *Glenbrook Station Upgrade – Determination Report*, (RPS, December 2018). In the event of an inconsistency between these conditions and the EIA, these conditions will prevail to the extent of the inconsistency.
2	**Project Modifications** Any modification to the Project as approved in the EIA would be subject to further assessment. This assessment would need to demonstrate that any environmental impacts resulting from the modifications have been minimised. The assessment shall be subject to approval under delegated authority by TfNSW. The Proponent shall comply with any additional requirements from the assessment of the Project modification.
3	**Statutory Requirements** These conditions do not relieve the Proponent of the obligation to obtain all other licences, permits, approvals and land owner consents from all relevant authorities and land owners as required under any other legislation for the Project. The Proponent shall comply with the terms and conditions of such licences, permits, approvals and permissions.
4	**Pre-Construction Environmental Compliance Matrix** A Pre-Construction Environmental Compliance Matrix (PECM) for the Project (or such stages of the Project as agreed to by the Associate Director Environmental Management (ADEM) shall be prepared detailing compliance with all relevant conditions and mitigation measures prior to commencement of construction. The PECM shall also include details of approvals, licences and permits required to be obtained under any other legislation for the Project. A copy of the PECM shall be submitted to the ADEM for approval, at least 21 days prior to commencement of construction of the Project (or within such time as otherwise agreed to by the ADEM).

CoA number	Type
5	**Construction Environmental Compliance Report** A Construction Environmental Compliance Report (CECR) for the Project shall be prepared which addresses the following matters: a) compliance with the Construction Environmental Management Plan (CEMP) and these conditions b) compliance with the *NSW Sustainable Design Guidelines – Version 4.0* compliance checklist (7TP-FT-249) c) compliance with any approvals or licences issued by relevant authorities for construction of the Project d) implementation and effectiveness of environmental controls (the assessment of effectiveness should be based on a comparison of actual impacts against performance criteria identified in the CEMP) e) environmental monitoring results, presented as a results summary and analysis f) details of the percentage of waste diverted from landfill and the percentage of spoil beneficially reused g) number and details of any complaints, including summary of main areas of complaint, actions taken, responses given and intended strategies to reduce recurring complaints (subject to privacy protection) h) details of any review and amendments to the CEMP resulting from construction during the reporting period i) any other matter as requested by the ADEM. The Proponent shall: i) submit a copy of the CECR to the EMR for review. The EMR is to be given a minimum period of 7 days to review and provide any comments to the Proponent in relation to the CECR ii) submit a copy of the CECR to the ADEM (or nominated delegate) for approval upon completion of the EMR review period. The first CECR shall report on the first six months of construction and be submitted within 21 days of expiry of that period (or at any other time interval agreed to by the ADEM). CECRs shall be submitted no later than six months after the date of submission of the preceding CECR (or at other such periods as requested by the ADEM) for the duration of construction.
6	**Pre-Operation Compliance Report** A Pre-Operation Compliance Report (POCR) for the Project shall be prepared, prior to commencement of operation of the Project. The POCR shall detail compliance with all Conditions of Approval, licences and permits required to be obtained under any other legislation for the Project. The Proponent shall: (a) submit a copy of the POCR to the EMR for review. The EMR is to be given a minimum period of 7 days to review and provide any comments to the Proponent in relation to the POCR. (b) upon completion of the EMR review period submit a copy of the POCR to the ADEM (or nominated delegate) for approval. The POCR is to be provided to the ADEM at least one month prior to the scheduled operation of the Project (or such time as otherwise agreed to by the ADEM).

CoA number	Type
	Communications
7	**Community Liaison Management Plan** A Community Liaison Management Plan (CLMP) shall be prepared and implemented by the contractor to engage with government agencies, relevant councils, landowners, community members and other relevant stakeholders (such as utility and service providers, bus companies and businesses). The CLMP shall comply with the obligations of these conditions and should include, but not necessarily be limited to: a) details of the protocols and procedures for disseminating information and liaising with the community and other key stakeholders about construction activities (including timing and staging) and any associated impacts during the construction period b) details of any community engagement activities required to consult with relevant stakeholders during detailed design c) stakeholder and issues identification and analysis d) procedures for dealing with enquiries, complaints or disputes and response requirements, including advertising the 24 hour construction response line number e) details (including a program) of training for all employees, contractors and sub-contractors on the requirements of the CLMP. The CLMP shall be prepared to the satisfaction of the Director Community Engagement (or nominated delegate) prior to the commencement of construction and implemented, reviewed and revised as appropriate during construction of the Project.
8	**Community Notification and Liaison** The local community and relevant stakeholders shall be advised of any activities related to the Project with the potential to impact upon them. Prior to any site activities commencing and throughout the Project duration, the community is to be notified of works to be undertaken, the estimated hours of construction and details of how further information can be obtained, (i.e. contact telephone number/email, website, newsletters etc.) including the 24 hour construction response line number. Construction-specific impacts including information on traffic changes, access changes, detours, services disruptions, public transport changes, high noise generating work activities and work required outside the standard working hours shall be advised to the local community at least seven days prior to such works being undertaken or other period as agreed to by the Director Community Engagement (or nominated delegate) or as required by the Environment Protection Authority (EPA) (where an Environment Protection Licence (EPL) is in effect).
9	**Website** The Proponent shall provide electronic information (or details of where hard copies of this information may be accessed by members of the public) related to the Project, on dedicated pages within its existing website, including: a) a copy of the documents referred to under Condition 1 of this approval b) a list of environmental management reports that are publicly available c) 24 hour contact telephone number for information and complaints. All documents uploaded to the website must be compliant with the *Web Content Accessibility Guidelines 2.0*.

CoA number	Type
10	**Complaints Management** The Proponent shall set up a 24 hour construction response line number. Details of all complaints received during construction are to be recorded on a complaints register. A verbal response to phone enquiries on what action is proposed to be undertaken is to be provided to the complainant within two hours (unless the complainant requests otherwise). A verbal response to written complaints (email/letter) should be provided within 48 hours of receipt of the communication. A detailed written response is to be provided to the complainant within seven calendar days for verbal and/or written complaints. Information on all complaints received during the previous 24 hours shall be forwarded to the TfNSW Community Engagement Manager and the TfNSW Environment and Planning Manager each working day.
	Environmental Management
11	**Environmental Personnel** A suitably qualified and experienced environmental resource shall be available who is responsible for implementing environmental objectives for the Project, including undertaking regular site inspections, preparation of environmental documentation and ensuring the Project meets the requirements of the Environmental Management System (EMS). Details of the environmental resource, including relevant experience, defined responsibilities and resource allocation throughout the project (including time to be spent on-site/off-site) are to be submitted for the approval by the ADEM, at least 21 days prior to commencement of construction of the Project (or within such time as otherwise agreed to by the ADEM). Any adjustments to environmental resource allocations (on-site or off-site) are to be approved by the ADEM.

CoA number	Type
12	**Construction Environmental Management Plan** A Construction Environmental Management Plan (CEMP) shall be prepared prior to commencement of construction which addresses the following matters, as a minimum: a) traffic and pedestrian management (in consultation with the relevant roads authority) b) noise and vibration management c) water and soil management d) air quality management (including dust suppression) e) indigenous and non-indigenous heritage management f) flora and fauna management g) storage and use of hazardous materials h) contaminated land management (including acid sulphate soils) i) weed management j) waste management k) bushfire risk l) sustainability m) environmental incident reporting and management procedures n) non-compliance and corrective/preventative action procedures. The CEMP shall: i) comply with the Conditions of Approval, conditions of any licences, permits or other approvals issued by government authorities for the Project, all relevant legislation and regulations, and accepted best practice management ii) comply with the relevant requirements of *Guideline for Preparation of Environmental Management Plans* (Department of Infrastructure, Planning and Natural Resources, 2004) iii) include an Environmental Policy. The Proponent shall: 1. consult with government agencies and relevant service/utility providers as part of the preparation of the CEMP 2. submit a copy of the CEMP to the EMR for review 3. submit a copy of the CEMP to the ADEM (or nominated delegate) for approval 4. review and update the CEMP at regular intervals, and in response to any actions identified as part of the EMR's audit of the document 5. ensure updates to the CEMP are be made within 7 days of the completion of the review or receipt of actions identified by any EMR audit of the document, and be submitted to the EMR for approval. The CEMP must be approved by the ADEM prior to the commencement of construction work associated with the Project.

CoA number	Type
13	**Environmental Management Representative** Prior to the commencement of construction, the ADEM shall appoint an EMR for the duration of the construction period for the Project. The EMR shall provide advice to the ADEM in relation to the environmental compliance and performance of the Project. The EMR shall have responsibility for: (a) considering and advising the Proponent on matters specified in these conditions and compliance with such (b) reviewing and where required by the ADEM, providing advice on the Project's induction and training program for all persons involved in the construction activities and monitoring implementation (c) periodically auditing the Project's environmental activities to evaluate the implementation, effectiveness and level of compliance of on-site construction activities with authority approvals and licences, the CEMP and associated plans and procedures, including carrying out site inspections weekly, or as required by the ADEM (d) reporting weekly to the Proponent, or as required by the ADEM (e) issuing a recommendation to the Proponent for work to stop immediately, if in the view of the EMR circumstances so require. The stop work recommendation may be limited to specific activities if the EMR can easily identify those activities (f) requiring reasonable steps to be taken to avoid or minimise unintended or adverse environmental impacts (g) reviewing corrective and preventative actions to ensure the implementation of recommendations made from the audits and site inspections (h) providing reports to the Proponent on matters relevant to the carrying out of the EMR role as necessary (i) where required by the ADEM, providing advice on the content and implementation of the CEMP and environmental controls map (ECM) in accordance with the conditions (j) reviewing and approving updates to the CEMP. The EMR shall be available during construction activities to inspect the site(s) and be present on-site as required.

CoA number	Type
14	**Environmental Controls Map** The Proponent shall prepare an environmental controls map (ECM) in accordance with TfNSW's *Guide to Environmental Controls Map (3TP-SD-015)* prior to the commencement of construction for implementation for the duration of construction. The ECM is to be endorsed by the EMR and may be prepared in stages as set out in the CEMP. The Proponent shall submit a copy of the ECM to the EMR for review and endorsement. The EMR is to be given a minimum period of 7 days to review and endorse the ECM. Following receipt of the EMR's endorsement, the ECM shall be submitted to the ADEM (or nominated delegate) for approval, at least 14 days prior to commencement of construction (or such time as is otherwise agreed to by the ADEM). The ECM shall be prepared as a map – suitably enlarged (e.g. A3 size or larger) for mounting on the wall of a site office and included in site inductions, supported by relevant written information. Updates to the ECM shall be made within 7 days of the completion of the review or receipt of actions identified by any EMR audit of the document, and be submitted to the EMR for approval.
	Contamination and Hazardous Materials
15	**Duty to Notify** If previously unidentified contamination is identified within the site, the Proponent is to determine whether there is a Duty to Report under section 60 of the *Contaminated Land Management Act 1997*, and notify the EPA in accordance with the EPA's Guidelines on the Duty to Report Contamination under the *Contaminated Land Management Act 1997* (Department of Environment and Climate Change, 2009).
16	**Unidentified Contamination (other than asbestos)** If previously unidentified contamination (excluding asbestos) is discovered during construction, work in the affected area must cease immediately, and an investigation must be undertaken and a report prepared to determine the nature, extent and degree of any contamination. The level of reporting must be appropriate for the identified contamination in accordance relevant EPA guidelines, including *Guidelines for Consultants Reporting on Contaminated Sites* (OEH, 2011). The Proponent shall: (a) submit a copy of any contamination report to the EMR for review. The EMR is to be given a minimum period of 7 days to review and provide any comments to the Proponent in relation to the report (b) submit a copy of the report to the ADEM for consideration upon completion of the EMR review period. The ADEM shall determine whether consultation with the relevant council and/or EPA is required prior to continuation of construction works within the affected area. ***Note:*** *In circumstances where both previously unidentified asbestos contamination and other contamination are discovered within a common area, nothing in these conditions shall prevent the preparation of a single investigation report to satisfy the requirements of both Condition 16 and Condition 17.*

CoA number	Type
17	**Asbestos Management** If previously unidentified asbestos contamination is discovered during construction, work in the affected area must cease immediately, and an investigation must be undertaken and a report prepared to determine the nature, extent and degree of the asbestos contamination. The level of reporting must be appropriate for the identified contamination in accordance with relevant EPA and WorkCover guidelines and include the proposed methodology for the remediation of the asbestos contamination. Remediation activities must not take place until receipt of the investigation report. Works may only recommence upon receipt of a validation report from a suitably qualified contamination specialist that the remediation activities have been undertaken in accordance with the investigation report and remediation methodology. ***Note:*** *In circumstances where both previously unidentified asbestos contamination and other contamination are discovered within a common area, nothing in these conditions shall prevent the preparation of a single investigation report to satisfy the requirements of both Condition 16 and Condition 17.*
18	**Storage and Use of Hazardous Materials** Construction hazard and risk issues associated with the use and storage of hazardous materials shall be addressed through risk management measures, which shall be developed prior to construction as part of the overall CEMP, in accordance with relevant EPA guidelines, TfNSW's *Chemical Storage and Spill Response Guidelines* (9TP-SD-066) and Australian and ISO standards. These measures shall include: a) the storage of hazardous materials, and refuelling/maintenance of construction plant and equipment to be undertaken in clearly marked designated areas that are designed to contain spills and leaks b) spill kits, appropriate for the type and volume of hazardous materials stored or in use, to be readily available and accessible to construction workers. Kits are to be kept at hazardous materials storage locations, in site compounds and on specific construction vehicles. Where a spill to a watercourse is identified as a risk, spill kits are to be kept in close proximity to potential discharge points in support of preventative controls c) all hazardous materials spills and leaks to be reported to site managers and actions to be immediately taken to remedy spills and leaks d) training in the use of spill kits to be given to all personnel involved in the storage, distribution or use of hazardous materials.
	Erosion and Sediment Control
19	**Erosion and Sediment Control** Soil and water management measures shall be prepared and implemented as part of the CEMP for the mitigation of water quality and hydrology impacts during construction of the Project. The management measures shall be prepared in accordance with *Managing Urban Stormwater: Soils and Construction - Volume 1,* 4th Edition (Landcom, 2004).

CoA number	Type
	Flora and Fauna
20	**Removal of Trees or Vegetation** Separate approval, in accordance with TfNSW's *Removal or Trimming of Vegetation Application* (9TP-FT-078), is required for the trimming, cutting, pruning or removal of trees or vegetation where the impact has not already been identified in the EIA for the Project. The trimming, cutting, pruning or removal of trees or vegetation shall be undertaken in accordance with the conditions of that approval.
21	**Replanting Program** All cleared vegetation shall be offset in accordance with TfNSW's *Vegetation Offset Guide* (9TP-SD-087). All vegetation planted on-site is to consist of locally endemic native species, unless otherwise agreed by the ADEM, following consultation with the relevant council, where relevant, and/or the owner of the land upon which the vegetation is to be planted.
	Heritage Management
22	**Indigenous and Non-Indigenous Heritage** If previously unidentified Indigenous or non-Indigenous heritage/archaeological items are uncovered during construction works, the procedures contained in the TfNSW *Unexpected Heritage Finds Guideline* (3TP-SD-115) shall be followed and all works in the vicinity of the find shall cease. The TfNSW Environment and Planning Manager shall be immediately notified to co-ordinate a response, which may include seeking appropriate advice from a suitably qualified and experienced heritage advisor (in consultation with the Heritage Division, OEH where appropriate). Works in the vicinity of the find shall not re-commence until clearance has been received from TfNSW and/or the heritage advisor.
23	**Heritage Advisor** A suitably qualified and experienced Heritage Advisor shall be engaged by the Contractor, to the satisfaction of the ADEIA. The Heritage Advisor will provide ongoing heritage, design and conservation advice throughout detailed design and any subsequent relevant design modifications. The Heritage Advisor is required to provide specialist advice throughout the detailed design phase to ensure that the final design adheres to the recommendations of the heritage assessments provided in the EIA. The Heritage Advisor must provide evidence as to their involvement in the design process at completion of AFC design, noting how the heritage requirements listed above have been addressed in the final design. In addition to providing specialist advice with respect to design, the Heritage Advisor will also have responsibility for: a) providing input into site heritage inductions; b) inspecting the works to ensure the design and construction impacts on heritage fabric are consistent with the provisions of these Conditions of Approval, heritage approvals under the Heritage Act 1977, and the CEMP.

CoA number	Type
24	**Archival Recording** Archival recording of the station as a whole, is to be undertaken prior to the commencement of construction in accordance with the NSW Heritage Division guidelines *Photographic recording of heritage items using film or digital capture* (NSW Heritage Office, 2006) and *How to prepare archival records* (NSW Heritage Office, 1998). Copies are to be provided to Blue Mountains City Council and Sydney Trains Heritage Team for future reference. In particular, the station building, platforms, footbridge and gardens are to be comprehensively included as part of the archival recording.
25	**Vibration Impacts to Heritage Listed Structures at the Station** To effectively mitigate potential impacts of vibration on the heritage structures within the station, activities that cause vibration are to be managed in accordance with German Standard DIN 4150 – Part 3 (DIN 1999) heritage specifications. Real time vibration monitoring is to be conducted at commencement of relevant works to confirm compliance with the German Standard DIN 4150. If vibration levels approach the determined trigger level, then the construction activity shall cease and the heritage structure is to be assessed and alternative construction methodologies developed, where practicable, before construction recommences.
	Hours of Work
26	**Standard Construction Hours** Construction activities shall be restricted to the hours of 7.00am to 6.00pm (Monday to Friday); 8.00am to 1.00pm (Saturday) and at no time on Sundays and public holidays except for the following works which are permitted outside these standard hours: a) any works which do not cause noise emissions to be more than 5 dBA higher than the rating background level (RBL) at any nearby residential property and/or other noise sensitive receivers b) out of hours work identified and assessed in the EIA or the approved Out of Hours Work Protocol (OOHWP) c) the delivery of plant, equipment and materials which is required outside these hours as requested by police or other authorities for safety reasons and with suitable notification to the community as agreed by the ADEM d) Emergency Work to avoid the loss of lives, property and/or to prevent environmental harm e) any other work as agreed by the ADEM (or nominated delegate) and considered essential to the Project, or as approved by the EPA (where an EPL is in effect).
27	**High Noise Generating Activities** Rock breaking or hammering, jack hammering, pile driving, vibratory rolling, cutting of pavement, concrete or steel and any other activities which result in impulsive or tonal noise generation shall not be undertaken for more than three hours, without a minimum one hour respite period unless otherwise agreed to by the ADEM, or as approved by the EPA (where relevant to the issuing of an EPL), unless inaudible at nearby residential properties and/or other noise sensitive receivers.

CoA number	Type
	Noise and Vibration
28	**Construction Noise and Vibration** Construction noise and vibration mitigation measures shall be implemented through the CEMP, in accordance with TfNSW's *Construction Noise and Vibration Strategy* (7TP-ST-157) and the EPA's *Interim Construction Noise Guideline* (Department of Environment and Climate Change, 2009). The mitigation measures shall include, but not be limited to: a) details of construction activities and an indicative schedule for construction works b) identification of construction activities that have the potential to generate noise and/or vibration impacts on surrounding land uses, particularly sensitive noise receivers c) detail what reasonable and feasible actions and measures shall be implemented to minimise noise impacts (including those identified in the EIA) d) procedures for notifying sensitive receivers of construction activities that are likely to affect their noise and vibration amenity, as well as procedures for dealing with and responding to noise complaints e) an Out Of Hours Work Protocol (OOHWP) for the assessment, management and approval of works outside the standard construction hours identified in Condition 24 of this approval, including a risk assessment process which deems the out of hours activities to be of low, medium or high environmental risk, is to be developed. All out of hours works are subject to approval by the EMR and/or ADEM (or nominated delegate), or as approved by the EPA (where relevant to the issuing of an EPL). The OOHWP should be consistent with TfNSW's *Construction Noise Strategy* (7TP-ST-157) f) a description of how the effectiveness of actions and measures shall be monitored during the proposed works, clearly indicating the frequency of monitoring, the locations at which monitoring shall take place, recording and reporting of monitoring results and if any exceedance is detected, the manner in which any non-compliance shall be rectified. g)
29	**Vibration Criteria** Vibration (other than from blasting) resulting from construction and received at any structure outside of the Project shall be limited to: a) for structural damage vibration – *German Standard DIN 4150: Part 3 – 1999: Structural Vibration in Buildings: Effects on Structures* b) for human exposure to vibration – the acceptable vibration values set out in the *Environmental Noise Management Assessing Vibration: A Technical Guideline* (Department of Environment and Conservation, 2006) These limits apply unless otherwise approved by the ADEM through the CEMP.
30	**Piling** Wherever practical, piling activities shall be completed using non-percussive piles. If percussive piles are proposed to be used, approval of the ADEM shall be obtained prior to commencement of piling activities.

CoA number	Type
31	**Noise impact on educational facilities** Potentially affected pre-schools, schools, universities and any other affected permanent educational institutions shall be consulted in relation to noise mitigation measures to identify any noise sensitive periods (e.g. exam periods). As much as reasonably practicable noise intensive construction works in the vicinity of affected educational buildings are to be minimised.
32	**Non-Tonal Reversing Beepers** Non-tonal reversing beepers (or an equivalent mechanism) shall be fitted and used on all construction vehicles and mobile plant regularly used on site (i.e. greater than one day) and for any out of hours work.
	Lighting
33	**Lighting Scheme** All permanent lighting for the Project is to be developed by a suitably qualified lighting designer and prepared in accordance with AS 1158 *Road Lighting* and AS 4282 *Control of the Obtrusive Effect of Outdoor Lighting.* The lighting scheme shall address the following as relevant: a) consideration of lighting demands of different areas b) strategic placement of lighting fixtures to maximise ground coverage c) use of LED lighting d) minimising light spill by directing lighting into the station e) control systems for lighting that dim or switch-off lights settings according to the amount of daylight the zone is receiving f) motion sensors to control low traffic areas g) allowing the lighting system to use low light or switch off light settings while meeting relevant lighting Standards requirements h) ensuring security and warning lighting is not directed at neighbouring properties. The proposed lighting scheme is to be submitted with the design submission and accepted by TfNSW's Precincts and Urban Design team.

CoA number	Type
	Property
34	**Property Condition Surveys** Subject to landowner agreement, property condition surveys shall be completed prior to piling, excavation or bulk fill or any vibratory impact works including jack hammering and compaction (Designated Works) in the vicinity of the following buildings/structures: a) all buildings/structures/roads within a plan distance of 20 metres from the edge of the Designated Works b) all heritage listed buildings and other sensitive structures within 50 metres from the edge of the Designated Works. Property condition surveys need not be undertaken if a risk assessment indicates that selected buildings/structures/roads identified in (a) and (b) will not be affected as determined by a qualified geotechnical and construction engineering expert with appropriate registration on the National Professional Engineers Register prior to commencement of Designated Works. Selected potentially sensitive buildings and/or structures shall first be surveyed prior to the commencement of the Designated Works and again immediately upon completion of the Designated Works. All owners of assets to be surveyed, as defined above, are to be advised (at least 14 days prior to the first survey) of the scope and methodology of the survey, and the process for making a claim regarding potential property damage. A copy of the survey(s) shall be given to each owner. A register of all properties surveyed shall be maintained. Any damage to buildings, structures, lawns, trees, sheds, gardens, etc. as a result of construction activity direct and indirect (i.e. including vibration and groundwater changes) shall be rectified at no cost to the owner(s).
	Sustainability
35	**Sustainability Officer** The Proponent shall identify a suitably qualified and experienced sustainability officer who is responsible for implementing sustainability objectives for the Project. Details of the sustainability officer, including defined responsibilities, duration and resource allocation throughout the appointment consistent with the Proponent's sustainability objectives are to be submitted to the satisfaction of the ADSPD prior to preparation of the PCSR (if applicable).

CoA number	Type
36	**Pre-Construction Sustainability Report** Prior to commencement of construction, a Pre-Construction Sustainability Report (PCSR) shall be prepared to the satisfaction of the ADSPD. The Report shall include the following minimum components: a) a completed electronic checklist demonstrating compliance with TfNSW's *NSW Sustainable Design Guidelines – Version 4.0* (7TP-ST-114) b) a statement outlining the Proponent's own corporate sustainability obligations, goals, targets, in house tools, etc c) a documented process to identify and progress innovation initiatives on the Project as appropriate. Areas of innovation that have been confirmed, and those subject to ongoing evaluation for implementation on the Project, are to be identified. A copy of the PCSR is to be submitted to the ADSPD for approval, at least 14 days prior to the commencement of construction (or within such time as otherwise agreed to by the ADSPD).
	Traffic and Access
37	**Traffic Management Plan** A construction Traffic Management Plan (TMP) shall be prepared as part of the CEMP which addresses, as a minimum, the following: a) ensuring adequate road signage at construction work sites to inform motorists and pedestrians of the work site ahead to ensure that the risk of road accidents and disruption to surrounding land uses is minimised b) maximising safety and accessibility for pedestrians and cyclists c) ensuring adequate sight lines to allow for safe entry and exit from the site d) ensuring access to Glenbrook Station and surrounding businesses and residential properties (unless affected property owners have been consulted and appropriate alternative arrangements made) e) managing impacts and changes to on and off street parking and requirements for any temporary replacement parking (this could include revising on-street parking regulations and to maximise opportunities for new on-street parking in the vicinity of the station during the construction period) f) parking locations for construction workers away from stations and busy residential areas and details of how this will be monitored for compliance g) routes to be used by heavy construction-related vehicles to minimise impacts on sensitive land uses and businesses h) details for the locations of kiss and ride, taxi rank and replacement bus stops if required including appropriate signage to direct customers, in consultation with the relevant taxi/bus operator(s). Particular provisions should also be considered for the accessibility impaired i) measures to manage traffic flows around the area affected by the Project, including as required regulatory and direction signposting, line marking and variable message signs and all other traffic control devices necessary for the implementation of the TMP. The Proponent shall consult with the relevant roads authority during preparation of the TMP as required, and obtain any approvals required under the *Roads Act 1993*. The performance of all Project traffic arrangements must be monitored during construction.

CoA number	Type
38	**Road Condition Reports** Prior to construction commencement, the Proponent shall prepare road condition surveys and reports on the condition of roads and footpaths affected by construction. Any damage resulting from the construction of the Project, aside from that resulting from normal wear and tear shall be repaired at the Proponent's expense.
39	**Road Safety Audit** A Road Safety Audit shall be undertaken as part of the detailed design process and on completion of construction. The Road Safety Audit shall include, but not be limited to, detailed assessment of sight distances for vehicles and new kiss and ride area and identification of mitigation measures proposed. The Road Safety Audit is to be submitted to and accepted by TfNSW. The findings of the Road Safety Audit would be provided to Blue Mountains City Council for information.

CoA number	Type
	Urban Design and Landscaping
40	**Urban Design Plan** An Urban Design Plan (UDP) shall be prepared which demonstrates design excellence in the essential urban design requirements of the Project, as evident in the following matters: a) the appropriateness of the proposed design with respect to the existing surrounding landscape, built form, behaviours and use-patterns (including consideration of Crime Prevention Through Environmental Design principles). This is to include but not be limited to: i. connectivity with surrounding local and regional movement networks including street networks, other transport modes and active transport networks. Existing and proposed paths of travel for pedestrians and bicycles should be shown ii. integration with surrounding local and regional open space and or landscape networks. Existing and proposed open space infrastructure/landscape elements should be shown iii. integration with surrounding streetscape including street wall height, active frontages, awnings, street trees, entries, vehicle cross overs etc iv. integration with surrounding built form (existing or desired future) including building height, scale, bulk, massing and land use (b) total water management principles to be integrated into the design where considered appropriate (c) consideration of the design refinements listed below during design development to maximise the urban design outcomes of the Project, along with a justification if any of the below is unable to be progressed: i. minimise bulk of the replacement platform canopy and new pedestrian bridge to and ensure that the heritage station building is the dominant feature ii. selection of appropriate materials and colour finishes for new elements of the Project to minimise visual impacts and enhance the overall appearance iii. consideration of the selection and location of new tree plantings that may provide partial screening (d) protection of the existing mosaics adjacent to the bus stop throughout all stages of construction (e) any other matters which the conditions require the UDP to address. The UDP shall be: 1. prepared and submitted to TfNSW with each design submission 2. prepared in consultation with council and relevant stakeholders, where appropriate 3. prepared by a registered architect and/or landscape architect who has appropriate and relevant urban design expertise 4. endorsed by TfNSW's Precincts and Urban Design team 5. endorsed by TfNSW Sustainability team.

41 **Public Domain Plan**

A Public Domain Plan (PDP) shall be prepared which demonstrates design excellence in the essential urban design requirements of the Project, as evident in the following matters:

a) materials, finishes, colour schemes and maintenance procedures including graffiti control for new walls, barriers and fences

b) location and design of pedestrian pathways, street (where relevant), telephones and lighting equipment

c) landscape treatments and street tree planting to integrate with surrounding streetscape

    i. landscape details, including details of soil preparation, mulches, plant selection, plant sizes (planting container and expected final sizes)

    ii. selection and location of new tree plantings that may provide partial screening of the station from surrounding receivers and facilitate improved amenity

    iii. where platform garden beds are to be relocated or replaced, use of plants of a similar species and maturity and reuse of existing stone edging

    iv. a schedule which details the landscape maintenance requirements to be implemented for the12 month period following the commencement of operation

d) opportunities for public art created by local artists to be incorporated, where considered appropriate, into the Project, including consideration of incorporating moveable heritage, or other forms of heritage interpretation, into blank street facing walls

e) total water management principles to be integrated into the design where considered appropriate

f) design measures included to meet TfNSW's *NSW Sustainable Design Guidelines - Version 4.0* (7TP-ST-114)

g) identification of design and landscaping aspects that will be open for stakeholder input, as required

h) consideration will be given to Blue Mountains City Council's *Public Domain Technical Manual* and *Street Tree Master Plan*

i) any other matters which the conditions require the PDP to address.

The PDP shall be:

j) prepared and submitted to TfNSW with each design submission

k) prepared in consultation with council and relevant stakeholders, where appropriate

l) prepared by a registered landscape architect

m) endorsed by TfNSW's Precincts and Urban Design team

n) endorsed by TfNSW's Sustainability team.

CoA number	Type
	Additional Conditions
42	**Graffiti and Advertising** Hoardings, site sheds, fencing, acoustic walls around the perimeter of the site, and any structures within the project footprint or built as part of the Project are to be maintained free of graffiti and advertising not authorised by the Proponent during the construction period. Graffiti and unauthorised advertising will be removed or covered within the following timeframes: a) offensive graffiti will be removed or concealed within 24 hours b) highly visible (yet inoffensive) graffiti will be removed or concealed within a week c) graffiti that is neither offensive or highly visible will be removed or concealed within a month d) any unauthorised advertising material will be removed or concealed within 24 hours.
	Site Specific Conditions
43	**Protection of Platform Garden Beds and Street Mosaics** Platform garden beds not nominated for removal/relocation shall be adequately protected during construction to ensure their heritage and aesthetic values are retained. The relocation of the existing platform garden bed to the western side of the station building shall also be supervised by a suitably qualified heritage advisor. In addition, the existing street mosaics on Burfitt Parade should be protected to help retain the community focused character. Should an impact need to occur, a community consultation strategy to relocate or replace the mosaics shall be developed.
44	**Coordination with Council for Public Events** In addition to Conditions of Approval 7 and 8, the Construction Contractor shall consider interfaces and coordinate with Blue Mountains City Council with respect to large public events in the area such as the Careflight Woodford to Glenbrook Classic, Australia Day and the Glenbrook Spring Festival. Where practicable, measures shall be put in place to ensure major construction works and impacts are minimised during key events.

END OF CONDITIONS

Appendix C Traffic and Transport Assessment of Proposal changes

Memorandum

To:	Amanda White	**At:**	RPS Group
From:	Kris Stone	**At:**	SLR Consulting Australia Pty Ltd
Date:	6 December 2018	**Ref:**	Determination_TrafficMemo_610.18158-M01-v0.2.docx
Subject:	TfNSW Transport Access Program Glenbrook Train Station Amendment to Traffic and Transport Report		

1 Introduction

Transport for NSW (TfNSW) has proposed the Glenbrook Station Upgrade (the 'Proposal'). The Proposal forms part of the Transport Access Program (TAP). TAP is a New South Wales (NSW) Government initiative to improve existing transport infrastructure, such as train stations, so they are modern, accessible, and secure. The primary aim is to improve station access and surrounding transport networks, so they are more accessible for the mobility impaired, elderly persons, parents and carers, and persons with a disability.

SLR Consulting (SLR) has been commissioned by TfNSW to prepare a Traffic, Transport and Access (TT&A) Impact Assessment which formed part of the Proposal REF. SLR submitted this assessment in October 2018 (*Traffic, Transport and Access Assessment, October 2018*, prepared by SLR Consulting); however, a change has been made to the Proposal subsequent to the assessment being completed and the REF going on public display.

This memorandum has been prepared to assess the consistency of traffic engineering impacts projected to result from the proposed changes compared to the REF assessment; and, determine possible mitigation strategies for the Proposal specific to the proposed changes.

2 Proposal

2.1 Temporary construction compound

As per Section 5.8 of the submitted TT&A report, a temporary construction compound would be required to accommodate a site office, amenities, laydown and storage area for materials. An area for a construction compound has been proposed in the western Burfitt Parade car park. The area nominated for the compound is on land owned by RailCorp.

The original Proposal included a construction compound that would result in the loss of 10 existing parking spaces. TfNSW has advised that the Proposal would now require an expanded construction compound resulting in the loss of 25 parking spaces as per Figure 4 of the determination report (*Glenbrook Station Upgrade Determination Report* December 2018, prepared by RPS).

It was previously envisaged that, whilst not insignificant, this parking supply reduction of 10 could be accommodated in the surrounding street network without technical investigation. The same assumption however, could not be made for the loss of 25 parking spaces. As a result, further technical investigations are required to support the proposed further parking reduction caused by the site construction compound.

2.2 Kiss and ride and accessible parking facilities

As per Section 4.6 of the submitted TT&A report, the Proposal would provide a kiss and ride facility on the northern side of Burfitt Parade.

The original Proposal included the reallocation of existing on-street car parking to accommodate sufficient kerbside length for three new kiss and ride spaces. TfNSW has advised that the kiss and ride facility would be revised to accommodate a new accessible parking space, effectively reducing the length of kerb for the kiss and ride facility.

3 Revised traffic and transport impacts

3.1 Temporary construction compound

The larger construction compound would result in more parking spaces being unavailable to customers during the construction period. To evaluate the impact and identify possible mitigation measures, SLR has undertaken a desktop parking accumulation assessment using Nearmap aerial imagery collected over a multi-year period since 2014 after which the western car park was constructed and the surrounding parking situation has remained relatively consistent.

The available on and off-street parking supplies were quantified within a reasonable walking catchment to the Station. Figure 1 illustrates the available car parking supply from observations located within an approximate 300m walking catchment to the Station.

It is noted that this supply includes road sections that are currently subject to parking regulation in the form of time restrictions.

Figure 1 Surrounding Parking Areas

Figure C included at Appendix A illustrates the observed parking supply within the walking catchment which features **277 Spaces –** which includes 50 restricted parking spaces. The total parking supply has been considered in Table 1 below and which summarises the parking demands that can be observed from the aerial imagery collected since 2014 which includes 11 weekdays. The aerial observations were typically captured after midday actual peak demands may occur before or after the flyover time; however, midday is considered a reasonable estimate for peak long-term commuter demands.

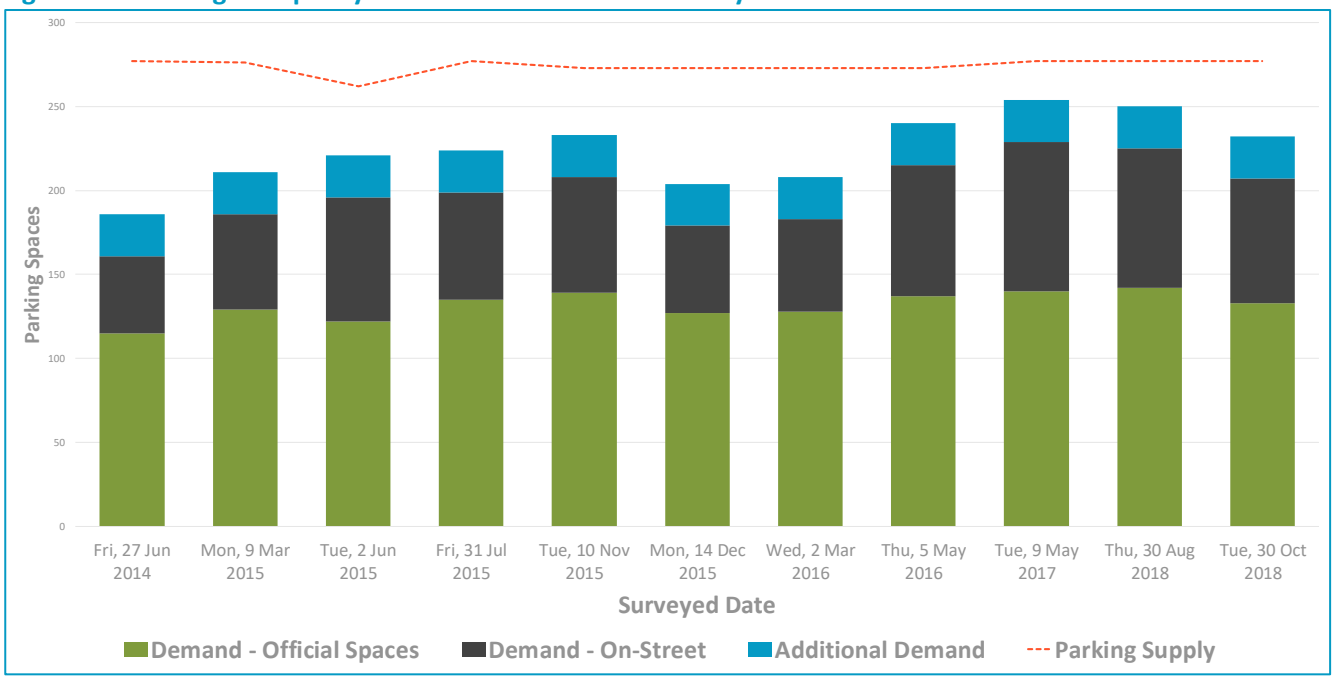
Table 1 Historical Parking Occupancy (27 June 2014 – 30 October 2018)

Date	Fri, 27 Jun 2014	Mon, 9 Mar 2015	Tue, 2 Jun 2015	Fri, 31 Jul 2015	Tue, 10 Nov 2015	Mon, 14 Dec 2015	Wed, 2 Mar 2016	Thu, 5 May 2016	Tue, 9 May 2017	Thu, 30 Aug 2018	Tue, 30 Oct 2018
Parking Supply*	277	276	262	277	273	273	273	273	277	277	277
Demand - Official Spaces	115	129	122	135	139	127	128	137	140	142	133
Demand - On-Street	46	57	74	64	69	52	55	78	89	83	74
Percentage Utilised	**58%**	**67%**	**75%**	**72%**	**76%**	**66%**	**67%**	**79%**	**83%**	**81%**	**75%**
Additional Demand	25	25	25	25	25	25	25	25	25	25	25
Spare Capacity	**91**	**65**	**41**	**53**	**40**	**69**	**65**	**33**	**23**	**27**	**45**

* Note: Some survey days appeared to have a smaller maximum parking supply caused by physical limitations in the area (i.e. car with trailer)

Figure 2 illustrates the demand and supply observations reported in Table 1.

Figure 2 Parking Occupancy Assessment – Historical Survey



The desktop analysis does indicate that there would be some periods where the combined on and off-street parking demand would approach the available supply within the assessed walking catchment. Accounting for the 25 space demand shift (shown in blue in Figure 2) there is still a spare parking capacity that ranges between 23 and 91 spaces.

Accordingly, commuters and residents and commuters would still be expected to find a parking space, albeit it would be more difficult during peak periods. Beyond a loss of convenience, this change would increase the car park search time and would also increase traffic movements on surrounding streets as motorists circulate looking for an available space.

The parking and traffic impacts identified herein are considered manageable given consideration of the following:

- That there is already a material demand for parking (and associated traffic) on the surrounding streets and that the on-street parking issue is not introduced by the Proposal
- That there is sufficient traffic capacity available in the surrounding street system to safely and efficiently accommodate the projected minor increase in traffic
- That the impacts are temporary during the construction period only
- That any spread of on-street car parking demand can be accommodated within a reasonable walking distance (i.e. 400-500m).

To mitigate the impacts of the loss of parking, the following is recommended for investigation by TfNSW and/or Blue Mountains Council:

- Investigate regulation opportunities to alter the existing on-street parking regulation signage to ensure equitable and efficient access and use of parking by residents and commuters
- Investigate opportunities to expand and/or improve local public transport routes and services so local commuters have a viable opportunity to shift from personal car travel to public transport to access the station (i.e. through the use of a temporary shuttle service)
- Investigate engineering opportunities to increase the on-street parking supply in the immediate walking catchment of the station.
  - There are a number of potential spaces along Burfitt Parade that could be provided by converting wide verge pathways to formalised parallel parking.
  - Alternatively, in areas where trafficable road pavement exceeds 9.5m, a formal parking lane could be provided in locations where no parking is currently provided (i.e. two x 3.5m trafficable lanes and ~2.5m parking lane on one side).
  - For these options, consideration must be given to the maintenance of safe pedestrian crossings for relevant desire lines, and existing design constraints associated with road geometry of Burfitt Parade (i.e. sight distance restrictions caused by crest at Glen Street).

3.2 Kiss and ride and accessible parking facilities

The proposed change to the kiss and ride zone would have the impact of reducing the effective length of the facility assessed in the original TT&A report by one space. Accordingly, the northern kiss and ride area would only accommodate two vehicles.

This change is not considered significant based on observations of existing user demand and the effect of the change on safety and operations subject to the facility being designed and constructed in accordance with standards.

It is recommended that the parking regulation signage adopted for the kiss and ride zone is of a type that ensures that the facility is available for transport customers and not motorists parking or waiting. It would be reasonable for the spaces to be signposted with a 2 minute passenger loading zone or similar signage.

APPENDIX A

Parking Assessment Context Figures

Prepared by SLR Consulting

Source: Nearmap

Figure A
Site Context

610.18158
Glenbrook NSW
...
2018-12-03

Source: Nearmap

Figure B
Walking Distance

610.18158
Glenbrook NSW
...
2018-12-03

APPENDIX B

Summary of Parking Occupancy Data

Prepared by SLR Consulting

Date	30-10-2018				
Time	Max Supply	1:30pm	Utilisation		Available
Western Carpark	56	52	93%	92%	12
Eastern Carpark	89	81	91%		
Mann St	8	5	63%	56%	58
Raymond St / Cross St	30	17	57%		
Euroka Rd	30	20	67%		
Restricted Parking Area	50	21	42%		
Burfitt Pde East	14	11	79%		

Cumulative Avg. To Date	
Occupied	Available
92%	12
56%	58

Date	30-08-2018				
Time	Max Supply	2:00pm	Utilisation		Available
Western Carpark	56	55	98%	98%	3
Eastern Carpark	89	87	98%		
Mann St	8	1	13%	63%	49
Raymond St / Cross St	30	15	50%		
Euroka Rd	30	29	97%		
Restricted Parking Area	50	28	56%		
Burfitt Pde East	14	10	71%		

Cumulative Avg. To Date	
Occupied	Available
95%	8
59%	54

Date	09-05-2017				
Time	Max Supply	1:15pm	Utilisation		Available
Western Carpark	56	56	100%	97%	5
Eastern Carpark	89	84	94%		
Mann St	8	1	13%	67%	43
Raymond St / Cross St	30	21	70%		
Euroka Rd	30	27	90%		
Restricted Parking Area	50	27	54%		
Burfitt Pde East	14	13	93%		

Cumulative Avg. To Date	
Occupied	Available
95%	7
62%	50

Date	05-05-2016				
Time	Max Supply	2:00pm	Utilisation		Available
Western Carpark	52	52	100%	97%	4
Eastern Carpark	89	85	96%		
Mann St	8	0	0%	59%	54
Raymond St / Cross St	30	16	53%		
Euroka Rd	30	24	80%		
Restricted Parking Area	50	29	58%		
Burfitt Pde East	14	9	64%		

Cumulative Avg. To Date	
Occupied	Available
96%	6
61%	51

Date	02-03-2016				
Time	Max Supply	3:45pm	Utilisation		Available
Western Carpark	52	47	90%	91%	13
Eastern Carpark	89	81	91%		
Mann St	8	2	25%	42%	77
Raymond St / Cross St	30	14	47%		
Euroka Rd	30	15	50%		
Restricted Parking Area	50	16	32%		
Burfitt Pde East	14	8	57%		

Cumulative Avg. To Date	
Occupied	Available
95%	7
57%	56

Date	14-12-2015				
Time	Max Supply	1:00pm	Utilisation		Available
Western Carpark	52	41	79%	90%	14
Eastern Carpark	89	86	97%		
Mann St	8	0	0%	39%	80
Raymond St / Cross St	30	11	37%		
Euroka Rd	30	14	47%		
Restricted Parking Area	50	17	34%		
Burfitt Pde East	14	10	71%		

Cumulative Avg. To Date	
Occupied	Available
94%	9
54%	60

Appendix D Noise and Vibration Assessment of Proposal changes

Memorandum

To:	Natalie Green	**At:**	RPS Group
From:	Dominic Sburlati	**At:**	SLR Consulting Australia Pty Ltd
Date:	5 December 2018	**Ref:**	Determination_NoiseVibMemo.docx
Subject:	TRANSPORT ACCESS PROGRAM Glenbrook Station Upgrade Noise and Vibration Impact Assessment - Consistency Assessment		

1 Introduction

Transport for NSW (TfNSW) has proposed the Glenbrook Station Upgrade (the 'Proposal'). The Proposal forms part of the Transport Access Program (TAP). TAP is a New South Wales (NSW) Government initiative to improve existing transport infrastructure, such as train stations, so they are modern, accessible, and secure. The primary aim is to improve station access and surrounding transport infrastructure, so they are more accessible for the mobility impaired, parents and carers, and persons with a disability.

SLR Consulting (SLR) has been commissioned by TfNSW to prepare a noise and vibration impact assessment as part of the Proposal Review of Environmental Factors (REF). SLR submitted this assessment in October 2018 (*Glenbrook Station Upgrade, Noise and Vibration Impact Assessment, October 2018*, prepared by SLR Consulting), however a minor amendment has been made to the upgrade proposal since the report was submitted earlier in the year.

The scope of the amendment with potential to influence noise and vibration impacts includes an increase in the construction site compound footprint and the inclusion of a new laydown area within the rail corridor.

This memorandum has been prepared to assess consistency of the predicted noise and/or vibration impacts as a result of the proposed changes compared to the REF assessment and evaluate the suitability of the mitigation strategy for the Proposal for the proposed changes.

2 Proposal Amendment

2.1 Temporary Construction Compound

As per Section 4 of the submitted noise and vibration impact assessment report, a temporary construction compound would be required to accommodate a site office, amenities, laydown and storage area for materials. An area for a construction compound has been proposed within the western car park on Burfitt Parade. The area nominated for the compound is on land owned by RailCorp.

It was previously proposed that the use of the car park as a site compound would result in a temporary reduction of approximately 10 parking spaces available to Glenbrook Station customers during the construction period. This reduction has now increased to 25 spaces as per Figure 4 of the determination report (*Glenbrook Station Upgrade Determination Report* December 2018, prepared by RPS).

The revised temporary construction compound would not result in an increase in noise emissions generated by the site as the type and quantity of noise producing items would remain the same. The revised temporary construction compound footprint and layout would not result in noise sources being located closer to nearby sensitive receivers located adjacent the site on Burfitt Parade.

2.2 Temporary Laydown Area

As per Section 4.4 of the REF noise and vibration impact assessment report, construction works would be required within the rail corridor in the vicinity of Glenbrook Station as per Figure 4 of the determination report (*Glenbrook Station Upgrade Determination Report* December 2018, prepared by RPS).

A new laydown area has been identified on the southern side of the rail corridor opposite the temporary construction compound. This laydown area would be used for materials storage only and may involve the use of trucks and excavators in this area during construction including rail possessions.

3 Revised Construction Noise Impacts

3.1 Temporary Construction Compound

As outlined in **Section 2.1**, the revised construction compound would not result in increased noise emissions from the site, nor would it result in noise sources being located closer to nearby sensitive receivers. Therefore, the revised construction compound definitions are considered to be consistent with the construction noise impacts presented in the REF (Section 4.5 of the Glenbrook Station Upgrade, Noise and Vibration Impact Assessment). The mitigation measures presented in the REF assessment are therefore considered appropriate for the amended compound footprint.

3.2 Temporary Laydown Area

As outlined in **Section 2.2**, the new laydown area would involve the use of trucks and excavators at times during possessions.

The construction scenarios and associated plant presented in Section 4.4 of the Glenbrook Station Upgrade, Noise and Vibration Impact Assessment included the use of trucks and excavators in the assessed construction works scenarios. Worst-case construction noise impacts associated with these works scenarios are dominated by construction equipment that is much noisier than trucks and excavators, such as piling rigs, concreting equipment, saws, grinders, etc. which are also proposed to operate nearby.

Whilst the trucks and excavators accessing the new temporary laydown area may be closer to nearby sensitive receivers than previously assessed, worst-case construction noise impacts for all construction scenarios would be dominated by more noise intensive equipment. Therefore, the new temporary laydown area is not anticipated to result in significantly different worst-case construction noise impacts compared to those presented in Section 4.5 of the Glenbrook Station Upgrade. The mitigation measures presented in the REF assessment are therefore considered appropriate for the temporary laydown area.

Checked/
Authorised by: RBH

Appendix E Arboricultural Assessment of Proposal changes

ALLIED TREE CONSULTANCY

Level 5 and 8 Arboriculturist

A PO Box 456, WOLLONGONG NSW 2520
P 1300 767 414
E admin@alliedtrees.com.au
W www.alliedtrees.com.au

Reference: **D4010A**
30th November 2018

RPS
Ground Floor, 241 Denison Street
BROADMEADOW, NSW 2292

Arborist Addendum

Re: Glenbrook Station Upgrade; Transport Access Program 3, Glenbrook Station, GLENBROOK, NSW

1.1A Introduction

The following addendum has been requested by *RPS*, based upon an amendment to the design and specifically the pedestrian ramp location and changes this will offer to the site trees. Based on this premise, trees included in this addendum are those that reside adjacent to this area of works and are trees No. 1 to 25 (Plan 2, Section 5.1). The aim related to this design amendment is to reduce the impact on site vegetation, that is tree removal. This addendum is based on the data provided in the Arboricultural Impact Assessment (referenced D4010). The following discussion refers to the design referenced below in Section 4.4.1. This drawing is a site plan only and does not provide elevations, sections or detail pertaining to the extent of impact on the natural ground. Section numbers included in the Arboricultural Impact Assessment are superseded by those contained in this Addendum.

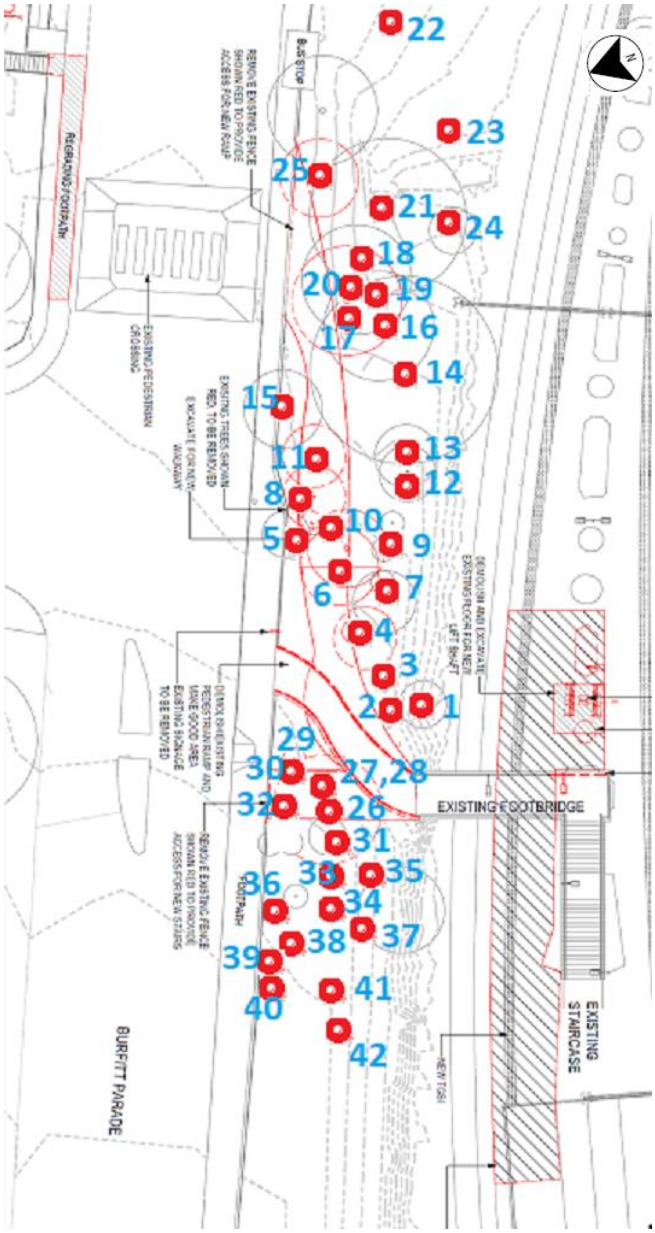
4.4 Documentation provided

The following documentation has been provided to *Allied Tree Consultancy* and utilised within the addendum.

4.4.1 Design

Drawn by *DesignInc P/L*
Reference: P18-040
Drawing No: Sheet 3; TAP-150068-GB-AR-1202, Revision 6, Dated 19th October 2018

5.1 Plan 2; Area of initial assessment illustrating tree location



Not to scale

Source: Adapted from *DesignInc P/L,* Sheet 3 of 3 (sketch/draft for a prior design).

7.1 Proposed development

This discusses the impact of the proposed design (Section 4.4.1) on the trees. The limitations (that is the absence of a complete drawing set) described in the introduction is relevant to the trees that are subject to a major encroachment (Section 7.1.5), where the encroachment type will be the defining variable that provides the opportunity for tree removal/retention. To allow for the construction methodology, a buffer of 1000mm from the ramp edge has been considered where any tree that falls within this buffer has been considered unsuitable for retention. The structure labeled 'FEN-01' is a wire fence and is considered to offer minimal impact on a tree, therefore has not been included as an encroachment nor structure that could impose detriment to a tree.

7.1.1 Trees and zones of protection (Tree Protection Zone; TPZ/ Structural Root Zone; SRZ) outside of the proposed design

Trees no. 1, 7, 9, 12, 13, 23 and 24

None of the proposed works conflict with the location of these trees or respective zones of protection. These trees can be retained without impact by the proposed design. Trees No. 7 and 13 present poor form[1] and could be removed or retained.

7.1.2 Trees providing a limited useful life expectancy

Trees no. 1, 2, 5, 6, 7, 8, 9, 11, 13, 15 and 25

These trees provide low significance based on the species, habit and rating and offer limited amenity value and life expectancy. Based on the low risk related to the lack of an existing target zone these trees can be retained unless they conflict with the proposed works. Based on the introduction of a new target zone, that is the proposed pedestrian ramp, further assessment of these trees after completion of works is required to determine the risk they could provide relative to the introduced target zones.

7.1.3 Trees directly conflicting with the design

Trees no. 5, 8, 11, and 22

These trees are located in the footprint of the proposed design (i.e., pedestrian ramp) and would require removal based on this premise alone.

7.1.4 Trees subject to a minor encroachment

Trees no. 3, 4, 14 and 20

These trees are not directly located in the footprint of the proposed design, however, are subject to a *minor encroachment*. That is, the proportion (<10%) of encroachment provided by design will not adversely impact on the tree. These trees can be retained relative to the design.

Tree no. 3: Encroachment: 2%; based on drawing TAP-150068-GB-AR-1130, the encroachment consists of the construction of the proposed pedestrian ramp.

Tree no. 4: Encroachment: 2%; based on drawing TAP-150068-GB-AR-1130, the encroachment consists of the construction of the proposed pedestrian ramp.

Tree no. 14: Encroachment: 8%; based on drawing TAP-150068-GB-AR-1130, the encroachment consists of the construction of the proposed pedestrian ramp.

Tree no. 20: Encroachment: 5%; based on drawing TAP-150068-GB-AR-1130, the encroachment consists of the construction of the proposed pedestrian ramp.

[1] Poor Form: Tree of atypical habit with proportions not representative of the species considering constraints and appears to have been adversely influenced by environmental factors.
Draper D., Richards P., 2009, Dictionary for Managing Urban Trees, CSIRO, Australia

7.1.5 Trees subject to a major encroachment

Trees no. 2, 6, 10, 15, 16, 17, 18, 19 and 21

These trees are not directly located in the footprint of the proposed design, however, are located close and adjacent to the design (pedestrian ramp) footprint and subject to a *major encroachment*, that is, in excess of 10% of the TPZ. An encroachment greater than 10% does not immediately imply the tree will be adversely affected and require removal, however pending the proportion of encroachment, tree species/condition and of foremost relevance, the type of encroachment. The drawing issued (Section 4.4.1) is a site plan and does not provide elevations, sections or detail pertaining to the extent of impact on the natural ground, that is an area containing the TPZ (root zone). Therefore the recommendation for tree retention and removal is an estimation based on the proportion (%) of impact and allowing for the greatest influence that is, removal of all root stem in the area of encroachment. The extent and type of encroachment for each tree are discussed and estimated opportunity for retention/removal.

Tree no. 2: Encroachment: 17%; Retain. The encroachment consists of the construction of the proposed pedestrian ramp. This tree can likely be retained although is classed as poor form (Section 7.1.2).

Tree no. 6: Encroachment: 35%; Remove. The encroachment consists of the construction of the proposed pedestrian ramp. This structure encroaches into the SRZ. The closest point of the ramp is less than 1000mm from the tree centre. To allow for construction methodology, it is unlikely this tree can be retained.

Tree no. 10: Encroachment: 33%; Remove. The encroachment consists of the construction of the proposed pedestrian ramp. This structure encroaches into the SRZ. The closest point of the ramp is less than 1000mm from the tree centre. To allow for construction methodology, it is unlikely this tree can be retained.

Tree no. 15: Encroachment: 30%; Remove. The encroachment consists of the construction of the proposed pedestrian ramp. This structure encroaches into the SRZ. The closest point of the ramp is less than 1000mm from the tree centre. To allow for construction methodology, it is unlikely this tree can be retained. This tree presents poor form and would typically be removed based on poor form (refer to Section 7.1.2 and footnote 1).

Tree no. 16: Encroachment: 12%; Retain. The encroachment consists of the construction of the proposed pedestrian ramp.

Tree no. 17: Encroachment: 23%; Retain. The encroachment consists of the construction of the proposed pedestrian ramp. This structure encroaches into the SRZ.

Tree no. 18: Encroachment: 22%; Retain. The encroachment consists of the construction of the proposed pedestrian ramp. This structure encroaches into the SRZ.

Tree no. 19: Encroachment: 21%; Retain. The encroachment consists of the construction of the proposed pedestrian ramp. This structure encroaches into the SRZ.

Tree no. 21: Encroachment: 11%; Retain. The encroachment consists of the construction of the proposed pedestrian ramp.

Tree no. 25: Encroachment: 40%; Remove. The encroachment consists of the construction of the proposed pedestrian ramp. This structure encroaches into the SRZ. The closest point of the

ramp is less than 1000mm from the tree centre. To allow for construction methodology, it is unlikely this tree can be retained. This tree presents poor form and would typically be removed based on poor form (refer to Section 7.1.2 and footnote 1).

9.0 Summary of tree impact

The initial design included in the Arboricultural Impact Assessment provided for the removal of fifteen trees (out of twenty-five) and retention of ten. The amended design has reduced the tree removal to eight trees and increased tree retention to seventeen trees. This has been illustrated in Table 3, Tree removal summary. Based on the amended design referenced in Section 4.4.1, the following summary provides the impacts imposed on the trees included in this addendum.

9.1 Trees no. 1, 2, 3, 4, 7, 9, 12, 13, 14, 16, 17, 18, 19, 20, 21, 23 and 24

These trees can be retained relative to the nominated zones of protection (TPZ, SRZ) and based on the requirements of the Protection Specification, Section 8.0. The proposed design does not adversely affect these trees.

9.2 Trees no. 5, 6, 8, 10, 11, 15, 22 and 25

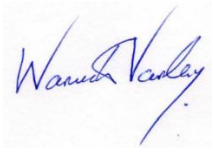
The proposed design will require the removal of these trees.

9.3 Table 3; Tree Removal Summary

Project Area	Initial Design -tree removal	Current Design -tree removal
Pedestrian ramp	15	8
Transformer	16	16
Total tree removal	31	24
Total trees assessed	42	

The opinions expressed in this brief by the author have been provided within the capacity of a Consulting Arborist. Any further explanation or details can be provided by contacting the author.

DATED: 14th December 2018



Warwick Varley
Consulting Arborist
Level 5 and 8; Arboriculturist
MIACA; Reg. #18,
MISA,
MIAH; Reg. # 32

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REGISTERED HORTICULTURIST 0032 AIH

Appendix F Heritage Assessment of Proposal changes

Sydney Office
Level 13, 255 Pitt Street, Sydney NSW 2000
T +61 2 9248 9800

RPS Australia East Pty Ltd ABN 44 140 292 762
A member of the RPS Group Plc

14 December 2018

Transport for NSW
Level 5, Tower A, Zenith Centre
Chatswood NSW 2067
Australia

Our ref: PR138951-3
Via: Email

Transport for NSW Transport Access Program 3: Glenbrook Station Upgrade - Compliance Memo

Background

In 2018, RPS was engaged by Transport for NSW (TfNSW) to prepare a Review of Environmental Factors (REF) for the proposed Glenbrook Station Upgrade (the Proposal) as part of the Transport Access Program (TAP) (RPS 2018). RPS prepared a Statement of Heritage Impact (SoHI) to assess potential heritage impacts associated with the Proposal. The aim of the SoHI was to identify the heritage values of the items which may be impacted by the Proposal, assess the heritage significance of those items, identify the potential impacts of the Proposal and provide appropriate recommendations to manage and/or mitigate those impacts. The SoHI identified nil to moderate heritage impacts associated with the Proposal and nine recommendations were made (RPS 2018:67-71).

Following the finalisation and delivery of the SoHI, TfNSW have made amendments to the Proposal (the amendments). This compliance memo draws on the information provided in the SoHI and identifies the potential impacts of the amendments to the heritage values assessed in the SoHI, as well as making recommendations to manage and/or mitigate those impacts. These recommendations have been made in accordance with the findings of this memo, relevant legislative requirements and in consideration of Sydney Trains' guidelines and strategies, included in 'Supporting Documents.'

Site identification

Glenbrook Station is located on the Blue Mountains Line within the town of Glenbrook and the Blue Mountains Local Government Area (LGA). The station is located approximately 67 kilometres west of the Central Station.

Glenbrook Station is listed on the RailCorp s.170 register (SHI #4801053) and the Blue Mountains Local Environment Plan (LEP) register (ID G011). The subject site for this assessment incorporates the Glenbrook Railway Station Group and includes the Commuter Car Park to the north and west of the station. (RPS 2018: Figure 1.3).

Amendments

The amendments to the existing proposed works are described below. The previous and new building layouts are included as Figure 2 in the body of the Determination Report.

- The proposed works located within the 'comms/staff amenities' and 'staff room' buildings are no longer part of the scope. Existing equipment racks will be utilised to house equipment.
- A bookcase within the 'store' building will be removed.
- Proposed door-widening of the Family Accessible Toilet (FAT) is no longer part of the scope. The existing grill would be removed and replaced with a new solid door.

The new building layout also includes the removal and relocation of a garden bed. This had been demarcated as a 'new work' however, this was covered under previous reporting (RPS 2018:70)

Assessment and heritage outcomes

The following implications for heritage have changed, based on the amendments to the Proposal:

- Impacts to heritage values have been reduced by the reduction in scope of works associated with both the 'comms/staff amenities' and 'staff room' buildings. Existing equipment racks will be utilised instead of being demolished and removed.
- The bookcase within the 'store' building is a modern bookcase constructed of galvanised metal and is not understood to be fastened to the wall (RPS 2018:33 Plate 3.14). Therefore, removal of this bookcase will not constitute an impact to heritage fabric.
- Impacts to heritage values have been reduced, as the proposed door-widening of the FAT is no longer being undertaken. Removal of the existing grill and replacement with a new solid-door will be of lesser impact than that which was assessed in the SoHI. It is understood that the colour, style and fixtures of new door would be sympathetic to the existing station building doors.

Overall, the amendments seek to avoid and/or reduce impacts to heritage values, by minimising the physical impacts to heritage fabric. The new building layout represents a positive outcome by seeking alternate options to the previous building layout.

Conclusions and recommendations

The amendments to the Proposal represent a reduction in Impacts to heritage values, therefore, management and mitigation methods have been reduced. Recommendations outlined in the previous report (RPS 2018: 67-71) should be adhered to. The below recommendations will supersede previous recommendations where they differ.

Recommendation three: Station Building interiors and exteriors

Heritage Consultant

A project heritage consultant should be engaged to assist with modifications to heritage fabric such as the lowering of internal floors and fire proofing works. The project heritage consultant should be involved in the further development of the design to provide advice on minimising impacts, avoidance of inadvertent impacts and implementation of the recommendations this report.

Lowering of existing floor levels and installation of new toilets

The proposed Family Accessible Toilet (FAT) is to be located within the existing male toilet. This portion of the Station Building was subject to upgrades in 2015 which replaced the flooring of the male and female toilets and passenger waiting room, and installation of new toilets. The lowering of existing floor levels associated with the Proposal is unlikely to impact heritage fabric.

While the floor lowering works in the proposed FAT would not require the removal of heritage fabric, efforts should be made to minimise visual impacts to the Station Building as follows:

- all works that involve direct impacts to heritage fabric should be guided by advice from the project heritage consultant to minimise impacts and avoid inadvertent impacts
- the floor lowering works in the proposed FAT should avoid inadvertent impacts to heritage fabric during the works. This would be achieved by establishing exclusions zones around heritage elements and

minimising the use of machinery near these elements. Vibration from machinery during construction has been considered in a separate technical report

- details of the privacy wall will be finalised during the detailed design phase. No heritage impacts have been identified with this component of the scope of works. However, the location of this wall should be guided from advice by the heritage consultant and be comprised of similar brick to the Station Building and base of the lift.

Yours sincerely
RPS

Lucy Irwin
Heritage Consultant

cc: Natalie Green, RPS
Claire Rayner, RPS
Aly Howard, RPS

References

RPS (2018) Transport for NSW Transport Access Program 3 Glenbrook Station Upgrade – Statement of Heritage Impact. Report to Transport for NSW.

Supporting Documents

Moveable Heritage Management Strategy 2015 – Sydney Trains

Moveable Heritage Disposal Policy 2016 – Sydney Trains

Heritage Technical Note: Installation of New Electrical and Data Services at Heritage Sites 2017 – Sydney Trains

Heritage Platforms Conservation Management Strategy 2015 – AMBS for Sydney Trains

Railway Footbridges Heritage Conservation Strategy 2016 – NSW Government Architect's Office Heritage Group.

Station Component Guide 2017 – Sydney Trains and NSW TrainLink.