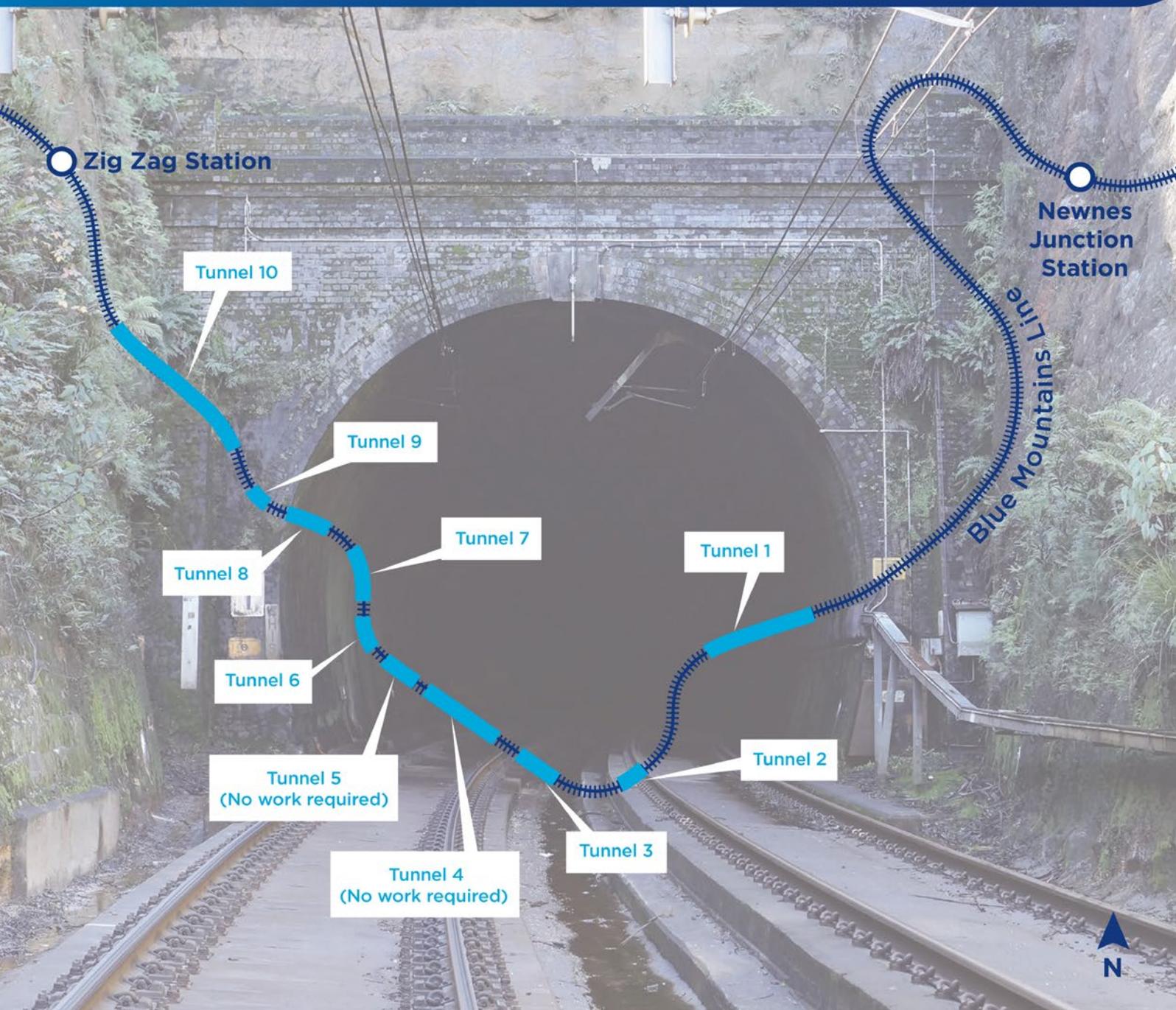


New Intercity Fleet Ten Tunnels Deviation Modifications

Determination Report



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Glossary and abbreviations

Term	Meaning
CEMP	Construction Environmental Management Plan
CMS	Conservation Management Strategy
Contractor	The Contractor for the Proposed Activity would be appointed by TfNSW to undertake the detailed design and construction of the Proposed Activity.
Determination Report	This document – a report prepared by TfNSW to assess and address certain matters to allow for a determination of the Proposed Activity under, and in accordance with, Part 5 Division 5.1 of the EP&A Act.
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> (NSW)
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i> (NSW)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth)
Infrastructure SEPP	<i>State Environmental Planning Policy (Infrastructure) 2007</i> (NSW)
IPART	Independent Pricing and Regulatory Tribunal
LEP	Local Environmental Plan
LGA	Local Government Area
NES	Matters of 'National Environmental Significance' under the EPBC Act
OEH	NSW Office of Environment and Heritage
Proposed Activity	The construction and operation of the Ten Tunnels Deviation Modifications
REF	Review of Environmental Factors
Section 60 Approval	Refers to the Section 60 Approval issued for the Proposed Activity under the <i>Heritage Act 1977</i> by the Heritage Council on the 29 March 2018 (included at Appendix C).
SHR	State Heritage Register
SoHI	Statement of Heritage Impact
TfNSW	Transport for NSW
TMP	Traffic Management Plan

Definitions

Term	Meaning
Carriages/cars	Individual pieces of rolling stock designed to carry passengers.
Concept design	The concept design is the preliminary design presented in this REF, which would be refined by the Contractor (should the Project proceed) to a design suitable for construction (subject to TfNSW acceptance).
Curtilage	The boundary of the relevant heritage listing (i.e. the area of land surrounding an item or area of heritage significance which is essential for retaining and interpreting its heritage significance).
Detailed design	Detailed design broadly refers to the process that the Contractor undertakes (should the Project proceed) to refine the concept design to a design suitable for construction (subject to TfNSW acceptance).
Determination	TfNSW is a determining authority for projects which require assessment under Part 5 Division 5.1 of the EP&A Act and must undertake this role in accordance with section 5.5 (previously section 111). To make a determination, TfNSW will prepare a report to document the consideration of the relevant legislative requirements and the potential environmental impacts of the project and determine whether these impacts are likely to be significant. TfNSW may also impose conditions of approval, as part of the determination.
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.
New Intercity Fleet	The New Intercity Fleet is a new fleet of trains that will replace the existing intercity fleet and will service the Central Coast and Newcastle, Blue Mountains and South Coast Lines.
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 and places of worship/religious facilities (e.g. churches).
NSW TrainLink	From 1 July 2013, NSW Trains (NSW TrainLink) became the new provider of intercity, regional and interstate rail and coach services for customers travelling longer distances.
Out of hours works	Defined as works <i>outside</i> standard construction hours (i.e. outside of 7am to 6pm Monday to Friday, 8am to 1pm Saturday).
Portal	The portal refers to the arched entrances and exits to each of the tunnels. The terms 'towards Lithgow' or 'towards Sydney' denote location and orientation.
Project	The construction and operation of the New Intercity Fleet – Ten Tunnels Deviation Modifications.

Term	Meaning
Project site	The rail corridor between the eastern portal of Tunnel 1 (Sydney end) to the western portal of Tunnel 10 (Lithgow end) and temporary construction compounds (between Tunnel 2 and Tunnel 3, at the end of Tunnel 9 and approximately 500 metres east of the Sydney end of Tunnel 1).
Proponent	A person or body proposing to carry out an activity under Part 5 Division 5.1 of the EP&A Act – in this instance, TfNSW.
Routine rail possession	<p>Possession is the term used by railway building/maintenance contractors to indicate that they have taken possession of the track (usually a block of track) for a specified period, so that no trains operate for a specified time. This is necessary to ensure the safety of workers and rail users.</p> <p>Routine rail possessions are scheduled closures that would occur regardless of the Proposed Activity.</p>
Reasonable	Selecting reasonable measures from those that are feasible involves making a judgment to determine whether the overall benefits outweigh the overall adverse social, economic and environmental effects, including the cost of the measure.
Sensitive receivers	Land uses which are sensitive to potential noise, air and visual impacts, such as residential dwellings, schools and hospitals.
Sydney Trains	From 1 July 2013, Sydney Trains replaced CityRail as the provider of metropolitan train services for Sydney.
Ten Tunnels Deviation	The Ten Tunnels Deviation is the section of railway track between Newnes Junction Station and Zig Zag Station on the Blue Mountains Line. The deviation comprises ten heritage-listed tunnels of varying lengths and the associated rail corridor in between.
Train sets	A series of train carriages/cars that are linked together for a particular service.
V-Set	A class of electric passenger train that is part of the existing intercity fleet that operates on the Central Coast & Newcastle Line and Blue Mountains Line.
XPT	Short for 'express passenger train'. The XPT fleet is used by NSW TrainLink for regional and interstate services.

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 Ten Tunnels Deviation Modifications (the 'Proposed Activity'), which is part of the New Intercity Fleet program.

The Proposed Activity would involve minor modifications to sections of the lining of eight tunnels in the Ten Tunnels Deviation and minor modifications to ancillary infrastructure extending from the eastern portal of Tunnel 1 (Sydney end) to the western portal of Tunnel 10 (Lithgow end) to facilitate the introduction of the new trains which are wider and longer than the existing V-Set trains.

Proposed modifications to accommodate the New Intercity Fleet from Springwood to Lithgow outside of the Ten Tunnels Deviation were previously developed by TfNSW and were subject to a separate environmental impact assessment process¹.

AECOM Australia Pty Ltd (AECOM) on behalf of TfNSW (as the Proponent for the Proposed Activity) has prepared a Review of Environmental Factors (REF) that 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

No modifications have been made to the Proposed Activity since the REF was prepared, however modifications may be considered during the detailed design phase.

Should 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 the potential significance of impacts 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 Ten Tunnels Deviation Modifications, to comply with its obligations under Part 5 Division 5.1 of the EP&A Act and determine whether or not to proceed with the Proposed Activity. TfNSW must make a determination in accordance with the provisions of Part 5 Division 5.1 of the EP&A Act.

Conclusion

Based on the assessments in the REF and a review of the submissions received from the community and stakeholders, it is recommended that the Proposed Activity be approved, subject to the mitigation measures included in the REF and the proposed 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 <https://www.transport.nsw.gov.au/projects/current-projects/new-intercity-fleet-program-springwood-to-lithgow-rail-corridor>

1 Introduction

1.1 Background

TfNSW is the NSW Government's lead public transport agency with responsibility for ensuring that planning and policy are fully integrated across all modes of transport in NSW. It manages a multi-billion dollar budget allocation for train, bus, ferry, light rail and taxi services and related infrastructure in NSW.

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

In May 2014, the NSW Government announced that it would deliver a New Intercity Fleet to replace the trains carrying customers from Sydney to the Central Coast, Newcastle, the Blue Mountains and the South Coast. The introduction of the New Intercity Fleet would replace the older electric train fleets currently used to provide intercity services.

The New Intercity Fleet will:

- provide a more consistent and improved level of customer service for intercity customers
- facilitate the replacement of two electric train sets currently in operation
- reduce the costs of intercity operations.

Modifications to sections of the lining of eight tunnels in the Ten Tunnels Deviation and minor modifications to ancillary infrastructure extending from the eastern portal of Tunnel 1 (Sydney end) to the western portal of Tunnel 10 (Lithgow end) are required to facilitate the introduction of the new trains which are wider and longer than the existing V-Set trains (see Figure 1-1).

Modifications to the Blue Mountains Line are required to be completed prior to the introduction of the New Intercity Fleet rolling stock. The modifications will be completed to meet the delivery schedule of the New Intercity Fleet. New trains will start operating on the Blue Mountains Line to Mount Victoria in mid-2020, followed by Lithgow a few months later.

TfNSW is the Proponent for the Ten Tunnels Deviation Modifications (referred to as the 'Proposed Activity' for the purposes of this report).

1.2 Review of Environmental Factors

A Review of Environmental Factors (REF) has been prepared for the Proposed Activity in accordance with sections 111 and 112 then in force (now sections 5.5 and 5.7 as of 1 March 2018) of the *Environmental Planning and Assessment 1979* (EP&A Act), and clause 228 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation). The REF takes into account to the fullest extent possible, all matters affecting or likely to affect the environment as a result of the Proposed Activity. The REF is included in Appendix A.

The Ten Tunnels Deviation Modifications REF was placed on public display from Tuesday 6 February to Tuesday 27 February 2018, with 17 submissions received. Issues raised in these submissions are addressed in Chapter 2 of this report.

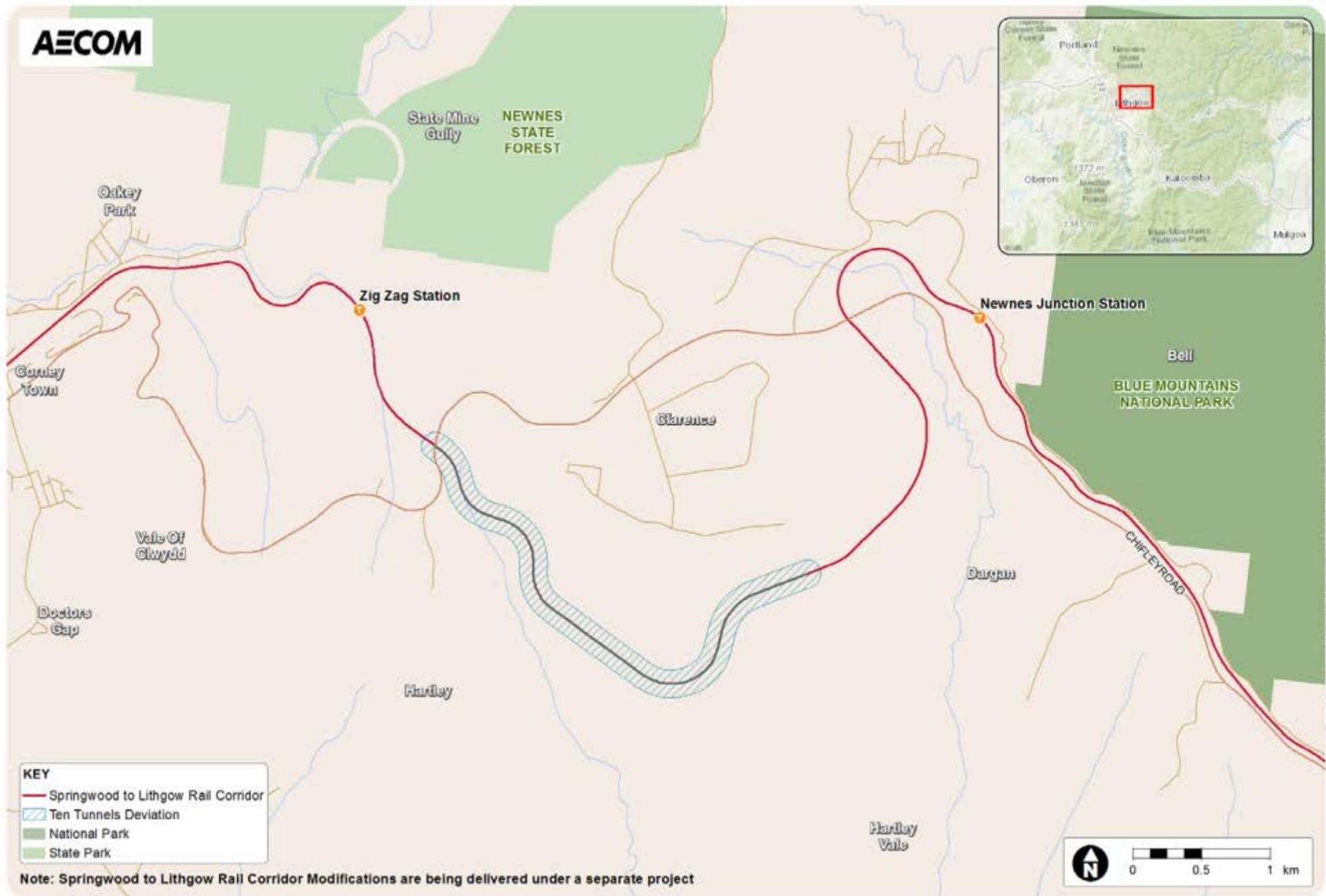


Figure 1-1 Regional context of the Project site

1.3 Determination Report

Prior to proceeding with the Proposed Activity, the Secretary for TfNSW must make a determination in accordance with Part 5 Division 5.1 of the EP&A Act (refer to Figure 1-2).



Figure 1-2: Planning approval process

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

- assess the environmental impacts with respect to the Proposed Activity, which 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 involve minor modifications to sections of the lining of eight tunnels in the Ten Tunnels Deviation and minor modifications to ancillary infrastructure extending from the eastern portal of Tunnel 1 (Sydney end) to the western portal of Tunnel 10 (Lithgow end) to accommodate the operation of the new trains which are wider and longer than the existing V-Set trains.

An overview of the Proposed Activity, which is the subject of the Ten Tunnels Deviation Modifications REF, is provided in the Executive Summary with full details set out in Chapter 3 of the REF.

Construction is expected to commence in 2018 and take around two years to complete.

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

1.4.1 Working hours

Given the tunnels are located within an active operating rail environment, construction work would need to be undertaken during pre-existing and scheduled rail possessions (typically 48 hours over a weekend where no trains are permitted to operate), and would involve out of hours works and extended shutdowns (typically the five days either side of a weekend possession).

The shutdown periods would generally take place between the hours of 9:45am and 6:15pm in order to allow diesel passenger trains (such as the XPT and regional services) and freight services to operate outside of these times. Replacement buses would be provided for intercity customers during weekend possessions and extended shutdown periods.

It is anticipated that the Project would utilise the following types of rail possessions and shutdown periods for the works:

- scheduled weekend routine rail possession and scheduled five-day shutdown on either side (extending for 12 days in total)

- scheduled weekend routine rail possession and scheduled five-day shutdown on either side with an additional three-day shutdown arranged at the end (extending for 15 days in total)
- scheduled weekend routine rail possession with an additional shutdown period for five days either side (i.e. additional five-day shutdowns on either side of scheduled weekend possessions would be arranged to allow construction teams to undertake works more efficiently)
- scheduled weekend routine rail possessions
- scheduled four or five day possessions.

A combination of six to eight of these types of possessions would be utilised to undertake the works. The final possession and extended shutdown requirements are still being developed (in consultation with Sydney Trains, NSW TrainLink and relevant industry stakeholders), and are also subject to detailed design and development of the contractor's construction methodology. Additional approvals may be required from TfNSW for out of hours works, and the affected community would be notified in accordance with the TfNSW *Construction Noise and Vibration Strategy* (TfNSW, 2018a).

2 Consultation and assessment of submissions

2.1 REF public display

The Ten Tunnels Deviation Modifications REF was placed on public display from Tuesday 6 February to Tuesday 27 February 2018 at six locations, as well as on the [Transport for NSW website](https://www.transport.nsw.gov.au/projects/current-projects/new-intercity-fleet-program-ten-tunnels)² and the NSW Government [Have Your Say website](http://www.haveyoursay.nsw.gov.au)³.

Community consultation activities undertaken during the public display period included:

- community information sessions held on:
 - 9 and 10 February 2018 at the Lithgow Valley Plaza, Lithgow
 - 13 and 17 February 2018 at the Mount Victoria Public Hall / Mount Vic Flicks, Mount Victoria
- distribution of a Project update to the local community and to the broader community and rail customers, outlining the Project and inviting feedback on the REF
- installation of posters promoting the community information sessions at stations between Blackheath and Lithgow
- public display of the REF at the following six locations: Blue Mountains City Council in Katoomba and Springwood, Mount Victoria Station, Lithgow City Council, Lithgow Library and Learning Centre and at the TfNSW reception in Chatswood
- placement of advertisements in the *Blue Mountains Gazette* on 31 January and 7 February 2018 and the *Lithgow Mercury* on 30 January and 6 February 2018
- information on the TfNSW website
- a letter to Lithgow City Council and Blue Mountains City Council 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.

2.2 REF submissions

A total of 17 submissions were received by TfNSW, including a submission from Lithgow City Council. Submissions included feedback on a range of issues in relation to the Proposed Activity. The key issues raised in submissions were:

- concern regarding impacts to the heritage value of the Ten Tunnels Deviation
- decision to purchase the trains from overseas
- features of the New Intercity Fleet, particularly:
 - seating configuration
 - final carriage configuration
 - provision of a vestibule to separate seating from the train doors (for temperature regulation).

² <https://www.transport.nsw.gov.au/projects/current-projects/new-intercity-fleet-program-ten-tunnels>

³ <http://www.haveyoursay.nsw.gov.au>

2.3 Consideration and response to submissions

2.3.1 Community submissions

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

Table 1 Responses to community submissions

No.	Submission no.	Issue/s raised	TfNSW response
1	General		
1.1	004; 010; 014; 015	Support for the Proposed Activity.	Noted.
1.2	005	Request for more regular services to Bathurst.	Consideration of more regular services to other destinations, including Bathurst, has not been considered as part of the Proposed Activity. The New Intercity Fleet will operate on the existing electrified network and therefore will not travel beyond Lithgow to Bathurst.
2	Scope of work		
2.1	007	Concern that modifications have not taken into account future-proofing and design life to avoid additional works in the future.	The New Intercity Fleet has been designed in response to a number of design life criteria in accordance with the Asset Standards Authority standards. The modifications would allow the Blue Mountains Line to be consistent with the existing electrified rail network. Modifications to the Ten Tunnels Deviation have been designed to minimise impacts to these heritage listed tunnels.
3	Construction timing		
3.1	006; 008	Concern regarding the length of construction given the extent of works.	The final construction timing would be confirmed by the Contractor during construction planning. Given that the tunnels are located within an active operating rail environment, construction work would need to be undertaken during pre-existing and scheduled rail possessions (typically 48 hours over a weekend where no trains are permitted to operate), and would involve out of hours works and extended shutdowns (typically the five days either side of a weekend possession) (see Section 1.4.1 for more details). The use of pre-existing and scheduled rail possessions minimises disruption to the operating rail line. Work would be undertaken in rail possessions over a two year timeframe rather than two years of continuous construction.

No.	Submission no.	Issue/s raised	TfNSW response
4	Community and stakeholder consultation		
4.1	005; 011	Concern that the opinions and submissions from residents of the Blue Mountains have not been listened to.	Submissions made as part of the consultation process for the Proposed Activity as well as other New Intercity Fleet projects have been documented, addressed and responded to as part of each project's respective Determination Report.
5	Non-Indigenous heritage		
5.1	001; 002; 013	Concern that the Proposed Activity will impact the heritage values of the Ten Tunnels Deviation.	<p>TfNSW understands the importance of protecting heritage items. Potential impacts to the heritage listed Ten Tunnels Deviation has been assessed as part of the heritage assessment prepared in accordance with relevant legislation and guidelines. Refer to Section 6.1 of the REF for a summary of the heritage assessments. The Ten Tunnels Deviation Modifications Statement of Heritage Impact can also be accessed online at the Project website⁴.</p> <p>TfNSW has obtained approval under the <i>Heritage Act 1977</i> from the Heritage Council for the Proposed Activity (see Appendix C).</p> <p>Designs for the tunnel modifications have been, and will continue, to be developed in collaboration with qualified heritage specialists to minimise heritage impacts (see Conditions 22 to 27).</p>
6	Traffic and transport		
6.1	006	Concern regarding the extent of disruption to existing service during modification works.	As described in Section 3.2.3 of the REF, disruption to travel as a result of the Proposed Activity would be largely limited to routine possession periods when trains will already not be operating. It is anticipated that between six to eight routine rail possessions would be utilised over the two-year construction period (prior to the New Intercity Fleet entering into service on the Blue Mountains Line). Replacement buses would be provided at this time to minimise disruption for customers. Notification would be provided to the community, local residents and local businesses to inform them in advance of changes to services.

⁴ <https://www.transport.nsw.gov.au/projects/current-projects/new-intercity-fleet-program-ten-tunnels>

No.	Submission no.	Issue/s raised	TfNSW response
6.2	007	Request for notification regarding proposed construction works in advance.	Transport for NSW is committed to consulting with the community. In accordance with the Conditions of Approval – Condition 8, we will provide notifications to the community, local residents and businesses to advise of upcoming construction work prior to work starting.
7	New Intercity Fleet program		
7.1	005; 011	Concern that the cost of purchasing the New Intercity Fleet and undertaking the Proposed Activity would be better spent on other things (e.g. National Parks).	<p>To enhance NSW rail passenger services, both the NSW Future Transport Strategy 2056 (TfNSW, 2018b) and Sydney's Rail Future: Modernising Sydney's Trains (State of NSW, 2012), identified the need to upgrade the intercity train fleet.</p> <p>The current intercity fleet trains are some of the oldest trains in the electric fleet and are approaching the end of their lifetime. They would need significant levels of maintenance and refurbishment to remain operational beyond 2019.</p>
7.2	012	Concern that the cost of purchasing the New Intercity Fleet and undertaking the Proposed Activity will result in fare increases for customers.	The decision to raise, lower or keep fares the same would continue to be made by the New South Wales Government based on recommendations from the Independent Pricing and Regulatory Tribunal (IPART).
7.3	001; 002; 004; 011; 013; 017	Concern with not using local manufacturers and workers for the fleet.	<p>TfNSW worked with Australian and overseas train manufacturers to identify the most suitable train design for the New Intercity Fleet. The tender evaluation selected an international consortium as the preferred supplier (all four tenderers proposed international design, manufacture and delivery). The successful consortium, which includes the Australian company UGL Rail, offered the best value for money. UGL Rail will be responsible for the maintenance of the fleet for the first 15 years of the project.</p> <p>Overseas manufacturing ensures the best value, best possible service and having the new trains on the tracks faster. Designing, building and fitting out the New Intercity Fleet overseas represents a saving of around 25 per cent. These savings will be invested in other infrastructure and services.</p>

No.	Submission no.	Issue/s raised	TfNSW response
7.4	001; 011; 017	Concern that wider trains have been selected, which require modifications to the Blue Mountains Line (including the Ten Tunnels Deviation), over trains that already fit the current rail network.	TfNSW worked with Australian and overseas train manufacturers to identify the most suitable train design. This design is based on a proven platform and technology. The proposed tunnel modifications are similar to work completed to allow for the introduction of the interurban V-Set trains in the 1970s.
7.5	004	Concern with what happens should the Proposed Activity not be approved.	Under a 'do nothing' option, the tunnels would not be modified. This option was not progressed, as without modifications to the tunnels, the New Intercity Fleet would not meet the necessary clearances to safely travel through the Ten Tunnels Deviation to Lithgow. This would not meet the objectives of the Project to provide a new passenger train across the electrified intercity network through to Lithgow, and so was discounted.
7.6	006	Request to provide a free day of transport upon roll out of new trains to build support from community.	NSW TrainLink will be working on community engagement activities to encourage people to experience the new trains, however a commitment to any specific initiative at the moment cannot be made at this point in time. This suggestion would be considered as plans are put together.
7.7	015	Request to know the budget / approved cost for the Blue Mountains Line works.	The upgrade of the Blue Mountains Line is subject to a tender process and the budget will not be released to ensure taxpayers receive the best value for money.

No.	Submission no.	Issue/s raised	TfNSW response
8	New Intercity Fleet features		
8.1	001; 003; 005; 006; 009; 013; 015; 017	Issue with the fixed direction of train seats and/or the face to face seating arrangement.	<p>The New Intercity Fleet is being designed with the comfort of the customer in mind. Customer feedback indicated that comfort was a key priority.</p> <p>Qualitative customer research conducted in 2015 included questions about customers preferred seating configurations, which has resulted in a design with the majority of seating not facing other passengers.</p> <p>The New Intercity Fleet layout of seating will be similar to that of the Tangara trains. Rows of seats in the middle of the carriage will be back-to-back, with seats at either end of the saloon facing each other to cater for families and groups travelling together.</p> <p>Reversible seating could only have been accommodated by significantly compromising on comfort and seating amenities.</p> <p>Reversible seating takes up more space than fixed seating and would have reduced the number of seats available for customers.</p> <p>Power for charging mobile devices at the seat and tray tables would not have been possible without fixed seating.</p>
8.2	003; 012	Request for a diagram of the interior layout for train carriages.	<p>The internal layout of the trains including the positioning of baggage storage is yet to be finalised. TfNSW will continue to work with customers and stakeholders to refine the design of the trains.</p>
8.3	013;	Request for improved and/or additional luggage space on trains.	<p>The New Intercity Fleet is being designed through a consultation process with customers. As a result of this consultation, dedicated space for luggage and bicycle racks, extra space for wheelchairs and prams, accessible toilets and baby changing facilities will be provided.</p> <p>The internal layout of the trains including the positioning of baggage storage is yet to be finalised. TfNSW will continue to work with customers and stakeholders to refine the design of the trains.</p>

No.	Submission no.	Issue/s raised	TfNSW response
8.4	009; 017	Request for a vestibule to separate the main carriage from train doors (for temperature regulation and noise).	<p>The vestibules on the current V-Set trains do not meet accessibility requirements.</p> <p>The New Intercity Fleet is being designed to meet accessibility requirements in line with the Disability Standards for Accessible Public Transport and for this reason will not have vestibules. The New Intercity Fleet will have modern air conditioning to ensure a regulated temperature in all parts of the train.</p>
8.5	003	Concern that wheelchair seating would be within the carriage ends near the doors without protection (i.e. vestibule) from the elements.	<p>The New Intercity Fleet is being designed to meet accessibility requirements in line with the <i>Disability Standards for Accessible Public Transport 2002</i> with wheelchair and accessible seating provided.</p> <p>The New Intercity Fleet will have modern air conditioning to ensure a regulated temperature in all parts of the train.</p>
8.6	013; 017	Request for seats to be cushioned and comfortable due to long duration of train rides.	<p>The New Intercity Fleet is being designed with the comfort of the customer in mind. The wider seating will provide a more comfortable journey for the customer through the use of fabric-covered, high-backed cushioned seats with arm rests and more space.</p> <p>TfNSW will continue to work with customers and stakeholders to finalise the seat design of the New Intercity Fleet.</p>
8.7	001; 013;	Concern that cup holders, chargers and/or tray tables are unnecessary as seat direction and comfort is more important.	<p>Customer feedback identified other features to help deliver increased comfort including charging stations for mobile devices, tray tables and cup holders, dedicated luggage, pram and bicycle space, accessible toilets and space for wheelchairs.</p> <p>Comfortable two by two seating has been designed for a longer journey time and feature wider, fabric covered, high-backed cushioned seats with arm rests and more space.</p>
8.8	005; 017	Issue with seating configuration being two by two as opposed to two and three.	<p>The feedback from our customers was that the current three by two seating configuration on the Oscar trains was not comfortable, especially during longer journeys. Therefore, TfNSW has selected a two by two seating configuration with much more comfortable seats and allowing each seat to incorporate a tray table, cup holder and charging stations for mobile devices.</p> <p>The two by two seating has been designed including wider, fabric covered, high-backed cushioned seats with arm rests and more space.</p>

3 Other stakeholder submissions

Issues raised by other stakeholders are provided below in Table 2 for Lithgow City Council.

Table 2 Responses to Submission from Lithgow City Council

Issue no.	Issue/s raised	TfNSW response
1	General	
1.1	Council has reviewed the REF and it appears that the environmental and amenity impacts are acceptable. Council supports any works being carried out in accordance with planned possessions and looks forward to the commencement of operations of the New Intercity Fleet.	Noted.

3.1 Future consultation

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

- local council and other stakeholders are kept informed during the detailed design process and construction
- the community and stakeholders are notified in advance of any upcoming works, including changes to pedestrian or traffic access arrangements and out of hours construction activities
- accurate and accessible information is made available
- a timely response is given to issues and concerns raised by the community
- feedback from the community is encouraged.

The [Transport for NSW email address](mailto:projects@transport.nsw.gov.au)⁵ and Infoline (1800 684 490) would continue to be available during the construction phase, along with a 24-hour construction complaints number. Targeted consultation methods, such as use of letters, notifications, signage and verbal communications, would continue to occur. The [Transport for NSW website](http://www.transport.nsw.gov.au/projects/intercity-fleet)⁶ would also include updates on the progress of construction.

⁵ projects@transport.nsw.gov.au

⁶ <http://www.transport.nsw.gov.au/projects/intercity-fleet>

4 Consideration of the environmental impacts

Environmental Planning and Assessment Act 1979

The REF addresses the requirements of section 111 (section 5.5 as of 1 March 2018) of the EP&A Act. In considering the Proposed Activity, all matters affecting or likely to affect the environment are addressed in the REF and the Determination Report and associated documentation.

In accordance with the checklist of matters pursuant to clause 228(3) of the EP&A Regulation, an assessment is provided in Chapter 6 of the REF and Appendix B of the REF.

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 112 (section 5.7 from 1 March 2018) 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?*](#)⁷ 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 Part 5 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.

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.

Heritage Act NSW 1977

The Ten Tunnels Deviation (subject to the Proposed Activity) is listed on the RailCorp Section 170 Heritage and Conservation Register, the heritage schedule of the *Lithgow Local Environmental Plan 2015* and the State Heritage Register.

The potential heritage impacts of the Proposed Activity have been assessed in a Statement of Heritage Impact and are summarised in Section 6.1 of the REF. The works would be undertaken in accordance with the approvals and associated conditions issued by the Office of Environment and Heritage (Heritage Council) under section 60 of the *Heritage Act 1977*, dated 29 March 2018 (refer Appendix C).

⁷ 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 at Appendix B.

6 Conclusion

Having regard to the assessment in the REF, consideration of the submissions received, 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 to be prepared under Part 5 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 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).

References

Construction Noise and Vibration Strategy (TfNSW, 2018a)

Future Transport Strategy 2056 (TfNSW, 2018b)

Sydney's Rail Future: Modernising Sydney's Trains (State of NSW, 2012)

Environmental Impact Assessment Determination

Ten Tunnels Deviation Modifications

APPROVAL

I, LOUISE SUREDA, as delegate of the Secretary, TfNSW:

1. Have examined and considered the Proposed Activity in the New Intercity Fleet Ten Tunnels Deviation Modifications Review of Environmental Factors (February, 2018) and the New Intercity Fleet Ten Tunnels Deviation Modifications Determination Report (April, 2018) in accordance with section 5.5 of the *Environmental Planning and Assessment Act 1979*.
2. Determine on behalf of TfNSW (the Proponent) that the Proposed Activity may be carried out in accordance with the Conditions of Approval in this Determination Report, consistent with the Proposed Activity described in the consistent Review of Environmental Factors (February, 2018) as amended by this Determination Report.



Louise Sureda
Director, Planning and Environment
Infrastructure and Services Division
Transport for NSW

Date: 20.4.18.

Appendix A Review of Environmental Factors

Please refer to the TfNSW website to access the New Intercity Fleet Ten Tunnels Deviation Modifications REF:

<https://www.transport.nsw.gov.au/projects/current-projects/new-intercity-fleet-program-ten-tunnels>

Appendix B Conditions of Approval

CONDITIONS OF APPROVAL

Ten Tunnels Deviation Modifications

Note: these conditions of approval must be read in conjunction with the final mitigation measures in the Ten Tunnels Deviation Modifications Review of Environmental Factors.

Schedule of acronyms and definitions used:

Acronym	Definition
ADEIA	TfNSW Associate Director Environmental Impact Assessment (or nominated delegate)
ADEM	TfNSW Associate Director Environmental Management (or nominated delegate)
ADSPD	TfNSW Associate Director Sustainability, Planning and Development (or nominated delegate)
CECR	Construction Environmental Compliance Report
CEMP	Construction Environmental Management Plan
CLP	Community Liaison Plan
dBA	Decibels (A-weighted scale)
ECM	Environmental Controls Map
EIA	Environmental Impact Assessment
EPA	NSW Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPL	Environment Protection Licence issued by the Environmental Protection Authority under the <i>Protection of the Environment Operations Act 1997</i>
EMS	Environmental Management System
ISO	International Standards Organisation
OEH	NSW Office of Environment and Heritage
OOHWP	Out of Hours Works Protocol
PCSR	Pre-Construction Sustainability Report
PECM	Pre-Construction Environmental Compliance Matrix
POCR	Pre-Operational Compliance Report
RBL	Rating Background Level
REF	Review of Environmental Factors
TfNSW	Transport for NSW
TMP	Traffic Management Plan

Term	Definition
Construction	Includes all work in respect of the Proposed Activity, 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).
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.
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 Proposed Activity 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 and places of worship/religious facilities (e.g. churches).
(the) Project	The construction and operation of the Ten Tunnels Deviation Modifications 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 Proposed Activity, TfNSW.
Reasonable and feasible	Consideration of best practice taking into account the benefit of proposed measures and their technological and associated operational application in the NSW and Australian context. Feasible relates to engineering considerations and what is practical to build. Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and nature and extent of potential improvements.

Condition number	Type
General	
1	<p>Terms of Approval</p> <p>The Project shall be carried out generally in accordance with the environmental impact assessment (EIA) for this Project, which comprises the following documents:</p> <ul style="list-style-type: none"> a) <i>Ten Tunnels Deviation Modifications – Review of Environmental Factors</i>, (AECOM, February 2018) b) <i>Ten Tunnels Deviation Modifications – Determination Report</i>, (AECOM, April 2018). <p>In the event of an inconsistency between these conditions and the EIA, these conditions will prevail to the extent of the inconsistency.</p>
2	<p>Project Modifications</p> <p>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.</p>
3	<p>Statutory Requirements</p> <p>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.</p>
4	<p>Pre-construction Environmental Compliance Matrix</p> <p>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.</p> <p>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).</p>
5	<p>Construction Environmental Compliance Report</p> <p>A Construction Environmental Compliance Report (CECR) for the Project shall be prepared which addresses the following matters:</p> <ul style="list-style-type: none"> a) compliance with the construction environmental management plan (CEMP) and these conditions b) compliance with TfNSW's <i>NSW Sustainable Design Guidelines - Version 3.0</i> 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

Condition number	Type
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(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.

A copy of each CECR shall be submitted to the ADEM for approval. 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.

A copy of the POCR shall be submitted to the ADEM for approval at least one month prior to the scheduled operation of the Project (or such time as otherwise agreed to by the ADEM).

Communications

7 Community Liaison Plan

A Community Liaison Plan (CLP) shall be prepared and implemented. The purpose of the CLP is 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 CLP 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) stakeholder and issues identification and analysis
- c) procedures for dealing with complaints or disputes and response requirements, including advertising the 24 hour construction response line number
- d) details (including a program) of training for all employees, contractors and sub-contractors on the requirements of the CLP.

The CLP shall be prepared to the satisfaction of the Director Community Engagement 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 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 nominated 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 as required by the Environment Protection Authority (EPA) (where an Environment Protection Licence (EPL) is in effect).

Condition number	Type
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9	<p>Website</p> <p>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:</p> <ul style="list-style-type: none">a) a copy of the documents referred to under Condition 1 of this approvalb) a list of environmental management reports that are publicly availablec) 24 hour contact telephone number for information and complaints. <p>All documents uploaded to the website must be compliant with the Web Content Accessibility Guidelines 2.0.</p>
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10	<p>Complaints Management</p> <p>The Proponent shall set up a 24 hour construction response line number.</p> <p>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 during all times construction is being undertaken and within 24 hours during non-construction times (unless the complainant agrees 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.</p> <p>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.</p>
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Environmental Management

11	<p>Construction Environmental Management Plan</p> <p>A Construction Environmental Management Plan (CEMP) shall be prepared prior to commencement of construction which addresses the following matters, as a minimum:</p> <ul style="list-style-type: none">a) traffic and pedestrian management (in consultation with the relevant roads authority)b) noise and vibration managementc) water and soil managementd) air quality management (including dust suppression)e) indigenous and non-indigenous heritage managementf) flora and fauna managementg) storage and use of hazardous materialsh) contaminated land management (including acid sulphate soils)i) weed managementj) waste managementk) bushfire riskl) sustainabilitym) environmental incident reporting and management proceduresn) non-compliance and corrective/preventative action procedures. <p>The CEMP shall:</p> <ul style="list-style-type: none">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 managementii) comply with the relevant requirements of <i>Guideline for Preparation of Environmental</i>
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Condition number	Type
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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 ADEM for approval at least 21 days prior to the commencement of construction (or within such time as otherwise agreed to by the ADEM)
3. review and update the CEMP at regular intervals, and in response to any actions identified as part of Project audits
4. ensure updates to the CEMP are made within seven days of the completion of the review or receipt of actions identified by any audit of the document, and be submitted to the ADEM for approval.

The CEMP must be approved by the ADEM prior to the commencement of construction work associated with the Project.

12	Environment Personnel
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Suitably qualified and experienced environmental management personnel shall be available and be responsible for implementing the 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 personnel, 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 of 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.

13	Environmental Controls Map
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An environmental controls map (ECM) shall be prepared in accordance with the TfNSW *Guide to Environmental Controls Map* (3TP-SD-015) prior to the commencement of construction for implementation for the duration of construction, and may be prepared in stages as set out in the CEMP.

A copy of the ECM must 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 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 seven days of the completion of the review or receipt of actions identified by any audit of the document, and submitted to the ADEM for approval.

Condition number	Type
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Hours of Work

14 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 (Emergency Work will require valid justification in writing which is to be endorsed by the ADEM)
- 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).

15 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).

Noise and Vibration

16 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 14 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 ADEM, or as approved by the EPA (where relevant to the issuing of an EPL). The OOHWP should be consistent with TfNSW's *Construction Noise and Vibration 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

Condition number	Type
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shall be rectified.

17 **Vibration Criteria**

Vibration 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* and British Standard BS 7385-2:1993 *Guide to Evaluation of Human Exposure to Vibration in Buildings (1 Hz to 80 Hz)*
- 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) which includes British Standard BS 7385-2:1993 *Guide to Evaluation of Human Exposure to Vibration in Buildings (1 Hz to 80 Hz)*.

These limits apply unless otherwise approved by the ADEM through the CEMP.

18 **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.

Contamination and Hazardous Materials

19 **Unidentified Contamination**

If previously unidentified 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 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).

A copy of any contamination report must be submitted to the ADEM for review for a minimum period of seven days. 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.

20 **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.
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Condition number	Type
Soils and water	
21	<p>Erosion and Sediment Control</p> <p>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 <i>Managing Urban Stormwater: Soils and Construction - Volume 1</i>, 4th Edition (Landcom, 2004).</p>
Heritage Management	
22	<p>Indigenous and Non-Indigenous Heritage</p> <p>If previously unidentified Indigenous or non-Indigenous heritage/archaeological items are uncovered during construction works, the procedures contained in the TfNSW <i>Unexpected Heritage Finds Guideline</i> (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 consultant (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 consultant.</p>
23	<p>Protection of State Heritage Items</p> <p>Design and construction of the Project within the curtilage of the Ten Tunnels Deviation must be undertaken in accordance with the conditions of approval granted under section 60 of the NSW <i>Heritage Act 1977</i> dated 29 March 2018 (refer Appendix C) and recommendations made in the New Intercity Fleet Great Zig Zag Railway Deviation Tunnels Modifications Statement of Heritage Impact (Artefact Heritage, January 2018) (available on the New Intercity Fleet project website⁸).</p> <p>In the event of any inconsistency between the</p> <ol style="list-style-type: none"> a) <i>Ten Tunnels Deviation Modifications – Determination Report</i>, (AECOM, April 2018), b) conditions of the Section 60 Approval, and c) New Intercity Fleet Great Zig Zag Railway Deviation Tunnels Modifications Statement of Heritage Impact (Artefact Heritage, January 2018); <p>the most stringent standard will prevail to the extent of the inconsistency.</p> <p>For the avoidance of doubt the <i>Ten Tunnels Deviation Modifications – Determination Report</i>, (AECOM, April 2018) includes the Conditions of Approval pertaining to the determination under Part 5 Division 5.1 of the EP&A Act.</p>
24	<p>Archival Recording</p> <p>Photographic archival recording of the Ten Tunnels Deviation, including portal entrances and existing cable route and trough within Tunnel 3, shall be undertaken in accordance with the following guidelines prior to its disturbance or removal (excluding investigations to develop the detailed design):</p> <ol style="list-style-type: none"> a) <i>How to prepare archival records of heritage items</i> (NSW Heritage Office 1998) b) <i>Photographic recording of heritage items using film or digital capture</i> (NSW Heritage Office 2006). <p>A copy of the archival recording shall be placed in Lithgow Library (157 Main Street, Lithgow) so that a complete record of the portals and tunnel walls are available for public</p>

⁸ <https://www.transport.nsw.gov.au/projects/current-projects/new-intercity-fleet-program-ten-tunnels>

Condition number	Type
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access. A copy is also to be provided to the Sydney Trains Heritage Team.

Prior to commencement of works, consideration shall be given to exploring options of conducting a video recording of the Great Zig Zag Railway deviation tunnels. This would be from the point of view of the driver, and be achieved by mounting a camera to the front of a train or work vehicle.

25	Independent Heritage Consultant
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A suitably qualified and experienced Heritage Consultant (HC) who is independent of the Contractor's design and construction personnel and approved by the ADEIA prior to the commencement of detailed design, shall undertake the following.

- a) provide input into, and review of, the design and construction of the Project to ensure that the design and construction are sympathetic to the heritage values of the Project and surrounding areas to the greatest extent practicable.

The HC will have responsibility for:

1. considering and advising the Proponent and Contractor on heritage matters relating to the detailed design of the Project;
2. reviewing the design submissions and providing input into detailed design development;
3. providing input into site heritage inductions; and
4. inspecting the works to ensure the design and construction impacts on heritage fabric are consistent with the provisions of these Conditions of Approval, the CEMP and any other heritage approvals.

26	Management of Heritage during Detailed Design and Construction
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In addition to Condition 23, the design and construction of the Project shall be undertaken with regard to the recommendations of the heritage assessment prepared for the Ten Tunnels Deviation and the mitigation measures in the REF.

Detailed design shall also be undertaken in consultation with the Sydney Trains Heritage Team and the Contractor must demonstrate how the comments have been considered in the design.

27	Vibration Impacts to Heritage Structures
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For vibration-intensive activities which occur within the safe working distance for cosmetic damage, management methods to mitigate these impacts would include, as a minimum:

- (a) use of less vibration-intensive methods of construction or equipment where reasonable and feasible to reduce annoyance and potential for cosmetic damage. A report shall be prepared documenting the investigation of less vibration-intensive methods, preferred construction methodology, proposed mitigation measures and monitoring strategy. The report shall be reviewed and endorsed by a suitably qualified vibration specialist and the mitigation measures, monitoring strategy and any recommendations of the vibration specialist shall be incorporated into the CEMP. A copy of the report and the vibration specialist's review and endorsement shall be submitted to the ADEM with the CEMP.
- (b) all equipment would be maintained and operated in an efficient manner, in accordance with manufacturer's specifications, to reduce the potential for adverse vibration impacts.
- (c) a structural engineer would oversee vibration-intensive activities, including undertaking regular inspections, to monitor for potential impacts to the integrity of the brickwork surrounding the working area.
- (d) condition surveys of sensitive heritage structures would also be carried out before construction works commence.

Condition number	Type
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Flora and Fauna

28 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.

Sustainability

29 Sustainability Officer

A suitably qualified and experienced Sustainability Officer shall be appointed, 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, are to be submitted to for the approval of the Associate Director Sustainability, Planning and Development (ADSPD) prior to preparation of the Pre-construction Sustainability Report (PCSR) (or within such time as otherwise agreed to by the ADSPD). Any adjustments to sustainability resource allocations are to be approved by the ADSPD.

30 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 3.0* (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.

The Proponent shall submit a copy of the PCSR 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

31 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) identifying traffic management requirements during construction
- (b) ensuring adequate road signage at construction work sites to inform motorists of the work site ahead to ensure that the risk of road accidents and disruption to surrounding land uses is minimised
- (c) ensuring adequate sight lines to allow for safe entry and exit from the site
- (d) managing staff travel to and from the site
- (e) routes to be used by heavy construction-related vehicles to minimise impacts on sensitive land uses and businesses
- (f) 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

Condition number	Type
	<p>(g) where practicable, avoid delivery of construction material during peak commuter travel periods</p> <p>The Proponent shall consult with the relevant roads authority during preparation of the TMP, as required and obtain any approvals as required under the <i>Roads Act 1993</i>. The performance of all Project traffic arrangements must be monitored during construction.</p>
32	<p>Road Condition Reports</p> <p>Prior to construction commencement, the Proponent shall prepare road condition surveys and reports on the condition of roads 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.</p>
33	<p>Road Safety Audit</p> <p>A Road Safety Audit shall be undertaken as part of the detailed design process and on completion of construction. The Road Safety Audit would include specific assessment of:</p> <ul style="list-style-type: none"> (a) sight distances for vehicles and mitigation measures proposed (b) assessment of the relevant intersections and mitigation measures proposed <p>The Road Safety Audit is to be submitted to and accepted by TfNSW.</p>
Additional Conditions	
34	<p>Graffiti and Advertising</p> <p>Hoardings, site sheds and offices, fencing, acoustic walls around the perimeter of the site, and any structures built or installed as part of the Proposed Activity 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:</p> <ul style="list-style-type: none"> (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.

END OF CONDITIONS

Appendix C Section 60 Heritage Act Consent and Conditions of Approval



File No: SF17/50387
Ref: DOC18/31192

Mr Ben Groth
Associate Director, Environmental Impact Assessment
Transport of New South Wales (TfNSW)
Level 5, Tower A Zenith Centre 821 Pacific Highway
CHATSWOOD NSW 2067

Via Email: Ben.Groth@transport.nsw.gov.au
Cc: Natalie Green Natalie.Green@transport.nsw.gov.au
Natalie Moore Natalie.Moore2@transport.nsw.gov.au

Dear Mr Groth

APPLICATION UNDER S60 OF THE *HERITAGE ACT 1977*
GREAT ZIG ZAG RAILWAY DEVIATION TUNNELS, STATE HERITAGE REGISTER N^o01037
GREAT ZIG ZAG RAILWAY AND RESERVES, STATE HERITAGE REGISTER N^o00542

Proposal: The proposed works include localised tunnel notching, rock bolting, geotechnical investigations, reconstruction of concrete tunnel wall lining (if required), replacement of lighting shields, replacement of an existing cable tray in tunnel 3, installation of signage and temporary works to enable construction

Section 60 Application No: S60/2018/008, received 29 January 2018
Information received with the application: As per Condition No. 1
Additional information requested: No

As delegate of the Heritage Council of NSW (the Heritage Council), I have considered the above Section 60 application. Pursuant to section 63 of the *Heritage Act 1977*, approval is granted subject to the following conditions.

1. All work shall comply with the information contained within:
 - a. Architectural Drawings prepared for Transport for NSW, as listed in the table below:

Dwg No	Dwg Title	Date	Rev
Project Name: New Intercity Fleet Enabling Works: Ten Tunnels Deviation			
FIGURE 1	OVERVIEW	16/01/18	0
FIGURE 2	TUNNEL 1 PROPOSED WORKS	16/01/18	0
FIGURE 3	TUNNEL 2 PROPOSED WORKS	16/01/18	0
FIGURE 4	TUNNEL 3 & 4 PROPOSED WORKS	16/01/18	0
FIGURE 5	TUNNEL 4 PROPOSED WORKS	16/01/18	0
FIGURE 6	TUNNEL 5 & 6 PROPOSED WORKS	16/01/18	0
FIGURE 7	TUNNEL 7 PROPOSED WORKS	16/01/18	0

FIGURE 8	TUNNEL 8 & 9 PROPOSED WORKS	16/01/18	0
FIGURE 9	TUNNEL 10 PROPOSED WORKS	16/01/18	0
FIGURE 10	TUNNEL 10 PROPOSED WORKS	16/01/18	0
NIF-101002-GHD-CV-10200	STRUCTURAL - TUNNEL LINING MODIFICATION. TREATMENT SCHEDULE	12/01/18	A1
NIF-101002-GHD-CV-10205	STRUCTURAL - TUNNEL LINING MODIFICATION. TYPICAL TUNNEL CROSS SECTION	12/01/18	A1
NIF-101002-GHD-CV-10210	STRUCTURAL - TUNNEL LINING MODIFICATION. TREATMENT DETAILS	12/01/18	A1
NIF-101002-GHD-CV-10215	STRUCTURAL - TUNNEL LINING MODIFICATION. TREATMENT DETAILS	12/01/18	A1

EXCEPT AS AMENDED by the conditions of this approval:

PROPOSED WORKS

2. The following items are to be submitted for approval by the Heritage Council or delegate prior to the commencement of each component of the work
 - a) Detailed design and methodology for the proposed geotechnical investigations. Details should include methodology, locations, size and depth of geotechnical boreholes. Works should minimise penetration into original fabric as much as possible.
 - b) Detailed design and methodology of the proposed notching to the lining of tunnels, including details on how works will alter the profile of tunnels. Works must consider maintaining current historic details and features where possible.
 - c) Details on how the modified tunnel walls will be treated/sealed after notching has occurred. Treatment should considerer minimising damage to fabric and visual impacts.
 - d) Detailed design and methodology of tunnel wall reconstruction, where required. The methodology must include details on how significant infrastructure will be protected during the works.
 - e) An updated heritage impact assessment must accompany additional details provided for condition 2 (a-d).

Reason: The details requested were not supplied during the assessment of the application. The assessment and management of these details is considered essential to obtain a good heritage outcome.

SPECIALIST TRADESPERSONS

3. All work shall be carried out by suitably qualified tradespersons with practical experience in conservation and restoration of similar heritage structures, methods and materials.

Reason: To ensure construction, conservation and repair of significant fabric follows best heritage practice.

HERITAGE CONSULTANT

4. A suitably qualified and experienced heritage consultant must be nominated for this project. The nominated heritage consultant must provide input into

the detailed design and supervise the works to minimise impacts to heritage values. The nominated heritage consultant must be involved prior to in the selection of appropriate tradespersons, and must be satisfied that all work has been carried out in accordance with the conditions of this consent.

Reason: The nomination of a heritage consultant is required to ensure the selection of fittings and materials and the implementation of the works are overseen by an appropriately qualified professional experienced with heritage buildings

SITE PROTECTION

- 5. Significant elements are to be adequately protected during the works from potential damage. Protection systems must ensure historic fabric is not damaged or removed.**

Reason: To ensure that significant fabric is not damaged during the works.

PHOTOGRAPHIC ARCHIVAL RECORDING

- 6. A photographic archival recording of the for the Great Zig Zag Railway deviation tunnels must be prepared prior to and after the commencement of works, in accordance with the NSW Heritage Division publications *How to prepare archival records of heritage items* and *Photographic Recording of Heritage Items using Film or Digital Capture*. The original copy of the archival record must be deposited with the Heritage Division, Office of Environment and Heritage, and an additional copy provided to the Lithgow City Council.**

Reason: To ensure that the tunnels are properly documented prior to their modification and that copies of the archival recordings are kept with the relevant authorities and to ensure that the original copies of significant documents are retained for future reference.

3D MODEL

- 7. A 3D model recording of the Great Zig Zag Railway deviation tunnels must be prepared using detailed scanning technology. An appropriate format of the 3D model must be deposited with the Heritage Division, Office of Environment and Heritage.**

Reason: To ensure an accurate high-fidelity model of the tunnels for archiving and future resource into materials and construction techniques.

UNEXPECTED HISTORICAL ARCHAEOLOGICAL RELICS

- 8. The Applicant must ensure that if unexpected archaeological deposits or relics not identified and considered in the supporting documents for this approval are discovered, work must cease in the affected area(s) and the Heritage Council of NSW must be notified. Additional assessment and approval may be required prior to works continuing in the affected area(s) based on the nature of the discovery.**

Reason: To ensure appropriate action is taken to protect potential archaeology.

COMPLIANCE

- 9. The Applicant and the nominated Heritage Consultant may be required to participate in random audits of Heritage Council approvals to confirm compliance with conditions of consent at any time.**

Reason: To ensure completion of the works in accordance with the approved plans and to improve the approvals process through a better understanding of the implementation of conditions of approval.

DURATION OF APPROVAL

10. This approval shall be void if the activity to which it refers is not substantially commenced within five years after the date of the approval, or within the period of consent specified in any relevant development consent granted under the *Environmental Planning and Assessment Act 1979*, whichever occurs first.

Reason: To comply with legislation.

ADVICE

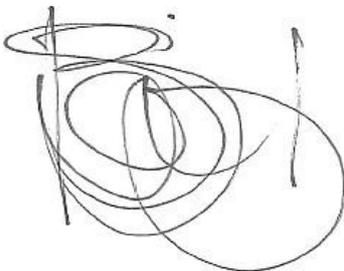
Your attention is drawn towards the powers of entry and inspection under s.148 of the *Heritage Act 1977* for authorised persons. If entry and inspection are required, reasonable notice will be provided as per the Act. The owner could voluntarily agree to allow non-authorised persons, such as Heritage Division (Office of Environment and Heritage) staff who are acting in a supporting role to the authorised persons, to enter their property for the purpose of inspection. Owners may also voluntarily grant permission to take photograph, take samples or request records.

Reason: Section 148 of the Heritage Act 1977, allows people authorised by the Minister to enter and inspect, for the purposes of the Act, with respect to buildings, works, relics, moveable objects, places or items that is or contains an item of environmental heritage. Reasonable notice must be given for the inspection.

It should be noted that an approval under the *Heritage Act 1977* is additional to that which may be required from other Local Government and State Government Authorities in order to undertake works.

If you have any questions regarding the above matter please contact Alexander Timms, Senior Heritage Officer at the Heritage Division, Office of Environment and Heritage, on telephone (02) 8837 6067 or at Alexander.Timms@environment.nsw.gov

Yours sincerely

A handwritten signature in black ink, appearing to be 'Sarah Jane Brazil', written over a circular stamp or seal.

Sarah Jane Brazil
Senior Team Leader, Major Projects
Heritage Division
Office of Environment and Heritage
As Delegate of the Heritage Council of NSW

29 March 2018