Mona Vale Road East upgrade – Manor Road, Ingleside to Foley Street, Mona Vale

Addendum Review of Environmental Factors

August 2021

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Executive summary

The proposed modification

Transport for NSW proposes to modify the Mona Vale Road East Upgrade by making several design changes, some of which require adjustments to the approved project boundary. Key features of the proposal would include:

- Modifying the design of and extending the length of the truck arrestor bed
- Provision of additional pedestrian and cycle connectivity away from the Mona Vale Road corridor, including a shared path along Wallaby Circuit, Walana Crescent and Lane Cove Road
- Provision of a guardrail along a section of Lane Cove Road
- Relocation of an operational stage stormwater detention basin and provision of a new concrete-lined drain near Ingleside Road
- Adjustments to the drainage design including the provision of a new concrete pipe and outlet in Boundary Street
- Additional utility adjustments on Samuel Street and Foley Street.

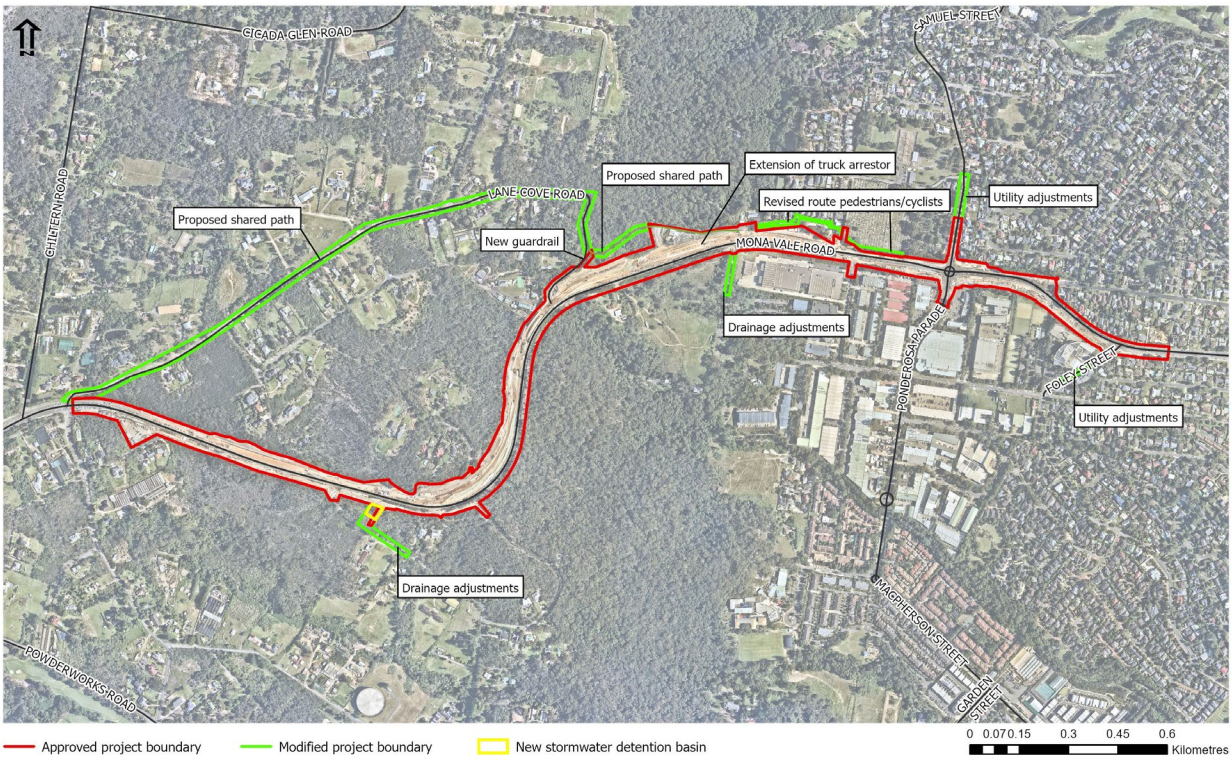

Figure E-1: Overview of the proposed modification

Background

A review of environmental factors (REF) was prepared for the Mona Vale Road East Upgrade on 24 July 2015 (referred to in this addendum REF as the project REF). The project REF was placed on public display between 29 July 2015 and 28 August 2015 for community and stakeholder comment. A submissions report dated 11 December 2015 was prepared to respond to issues raised. The project REF was determined on 7 December 2015.

In addition, an addendum REF for the project was prepared in December 2017 (and determined on 24 January 2018).

Need for the proposed modification

The proposed modification reflects further design development of the proposal and responds to opportunities that have arisen since the determination of the project REF. Specifically, the proposed modification:

- Addresses an opportunity to provide a shared path connection along Lane Cove Road following further consultation with Northern Beaches Council. This was originally included in the project REF, but was removed from the scope of the project as documented in the 2017 addendum REF
- Addresses an opportunity (enabled by the redesign of the shared path connection between Mona Vale Road and Lane Cove Road) to further improve safety by extending the length of the truck arrestor bed
- Improves safety through the provision of a guardrail along a bend on Lane Cove Road
- Optimises the drainage design for the project and provides improved maintenance accessibility
- Captured additional utility adjustment requirements.

Proposal objectives

Section 2.3 of the project REF identifies the proposal objectives that apply to the proposed modification.

Options considered

The do nothing option was discarded because the proposed modification is better aligned with the project objectives. The proposed modification was selected as the preferred option for the following reasons:

- Further enhanced safety with the provision of a longer truck arrestor bed and a guardrail on Lane Cove Road. This aligns with Project Objective 1 (Provide a safe road environment that reduces the frequency and severity of crashes).
- Improved safety and amenity for pedestrians and cyclists with the provision of a shared path away from the Mona Vale Road corridor. This aligns with Project Objective 6 (Contribute to safe and effective pedestrian and cycling infrastructure, that supports local and State Government initiatives for active transport).

Statutory and planning framework

The proposed modification is categorised as development for the purpose of a road and/or road infrastructure facilities and is being carried out by or on behalf of a public authority.

Under clause 94 of ISEPP the proposed modification is permissible without consent. The proposed modification is not State significant infrastructure or State significant development. The proposed modification can be assessed under Division 5.1 of the EP&A Act. Consent from Council is not required.

A referral to Australian Government Department of Agriculture, Water and the Environment under the EPBC Act is not required.

Community and stakeholder consultation

Transport for NSW has undertaken targeted consultation with affected residents, property owners, businesses and Council. The wider community have been informed of project updates via website content and newsletters distributed via letterbox.

The addendum REF will be publicly displayed for comment in August 2021. Following the public display of the addendum REF, all comments received would be recorded and addressed in a Submissions Report detailing how each issue raised would be considered in finalising the proposal design. The Submissions Report will be made available to the public on the project webpage on the Transport for NSW website.

Environmental impacts

Detailed technical investigations have been carried out where needed to identify, assess, manage and minimise project potential impacts. The following outlines the proposed modification's main impacts on the environment and surrounding community. The safeguards and mitigation measures identified in this REF would help minimise the expected adverse impact.

Biodiversity

The proposed modification would result in additional clearing of native vegetation on Lane Cove Road, between Walana Crescent and Lane Cove Road and along Ingleside Road. None of the native vegetation affected conforms to a threatened ecological community listed by the BC Act or EPBC Act.

The proposed modification has the potential to affect threatened Angus's Onion Orchid individuals along Lane Cove Road and Ingleside Road.

The proposed modification has the potential to affect Eastern Pygmy-possum, Red-crowned toadlet, and Glossy Black-Cockatoo habitat on Lane Cove Road, between Walana Crescent and Lane Cove Road and along Ingleside Road.

Measures have been proposed to avoid, minimise and mitigate the above potential impacts. Any direct impacts on Angus's Onion Orchid would be offset.

Landscape character and visual amenity

The proposed modification represents a relatively small incremental change to the approved project and would not affect the landscape character impact ratings included Table 6-29 of the project REF.

The proposed modification would not obscure or reduce the quality of any scenic views and would have minimal impact on viewpoints assessed as part of the project REF. Additional viewpoints assessed for the proposed modification (Lane Cove Road and Ingleside Road had identified Moderate-Low or Moderate impacts) largely driven by vegetation removal. Additional viewpoints on Walana Crescent and within Mona Vale Cemetery would have Moderate-Low impact noting the limited visual change compared to the existing.

Other issues

The proposed modification would have a number of other potential impacts primarily during construction, including noise, dust, water quality impacts and the generation of waste. Measures were included in the project REF and Submissions Report to avoid, minimise or mitigate these impacts.

An additional safeguard has been included to ensure there are no impacts on nearby Aboriginal sites.

Justification and conclusion

The proposed modification reflects further design development of the proposal and respond to opportunities that have arisen since the determination of the project REF.

While there would be some environmental impacts as a consequence of the proposed modification, including biodiversity and visual impacts, they have been avoided or minimised wherever possible through the site-specific safeguards summarised in section 7.

The benefits of the proposed modification (improved safety, pedestrian /cyclist connectivity, optimised drainage) are considered to outweigh the mostly temporary adverse impacts and risks associated with the proposed modification.

Display of the addendum review of environmental factors

This addendum REF is on display for 28 days. The documents are available as pdf files on the Transport for NSW website at:

nswroads.work/mvreast

How can I make a submission?

To make a submission about this proposal, please send your written comments to:

monavaleroad@rms.nsw.gov.au

Submissions must be received by the closure of the display period. Submissions will be managed in accordance with the Transport for NSW Privacy Statement which can be found here:

www.transport.nsw.gov.au/privacy-statement

What happens next?

Transport for NSW will collate and consider the submissions received during public display of the addendum REF.

After this consideration, Transport for NSW will determine whether or not the proposed modification should proceed as proposed and will inform the community and stakeholders of this decision.

If the proposed modification is determined to proceed, Transport for NSW will continue to consult with the community and stakeholders prior to and during construction.

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1 Introduction

1.1 Proposal identification

Transport for NSW proposes to modify the Mona Vale Road East Upgrade by making several design changes, some of which require adjustments to the approved project boundary. Key features of the proposal would include:

- Modifying the design of and extending the length of the truck arrestor bed
- Provision of additional pedestrian and cycle connectivity away from the Mona Vale Road, including a shared path along Wallaby Circuit, Walana Crescent and Lane Cove Road
- Provision of a guardrail along a section of Lane Cove Road
- Relocation of an operational stage stormwater detention basin and provision of a new concrete-lined drain near Ingleside Road
- Adjustments to the drainage design including the provision of a new concrete pipe and outlet in Boundary Street
- Additional utility adjustments on Samuel Street and Foley Street.

The location of the proposed modification is shown in Figure 1-1 and the proposed modification is shown in Figure 1-2. Chapter 3 describes the proposed modification in more detail.

A review of environmental factors (REF) was prepared for the Mona Vale Road East Upgrade on 24 July 2015 (referred to in this addendum REF as the project REF). The project REF was placed on public display between 29 July 2015 and 28 August 2015 for community and stakeholder comment. A submissions report dated 11 December 2015 was prepared to respond to issues raised. The project REF was determined on 7 December 2015.

In addition, an addendum REF for the project was prepared in December 2017 (and determined on 24 January 2018) and covered a range of modifications to the project including:

- Adjustments to the project footprint
- Site compound and ancillary sites
- Changes to drainage and flooding management strategies
- Changes to noise management measures
- Changes to the shared use path (including removal of the previously proposed section along Lane Cove Road)
- Updated road surface design and construction methodology
- Refinements to utility adjustments
- New and upgraded emergency access tracks
- Improved fauna connectivity measures
- Landscaping changes near the Pittwater RSL Club.

Figure 1-1: Location of the proposal

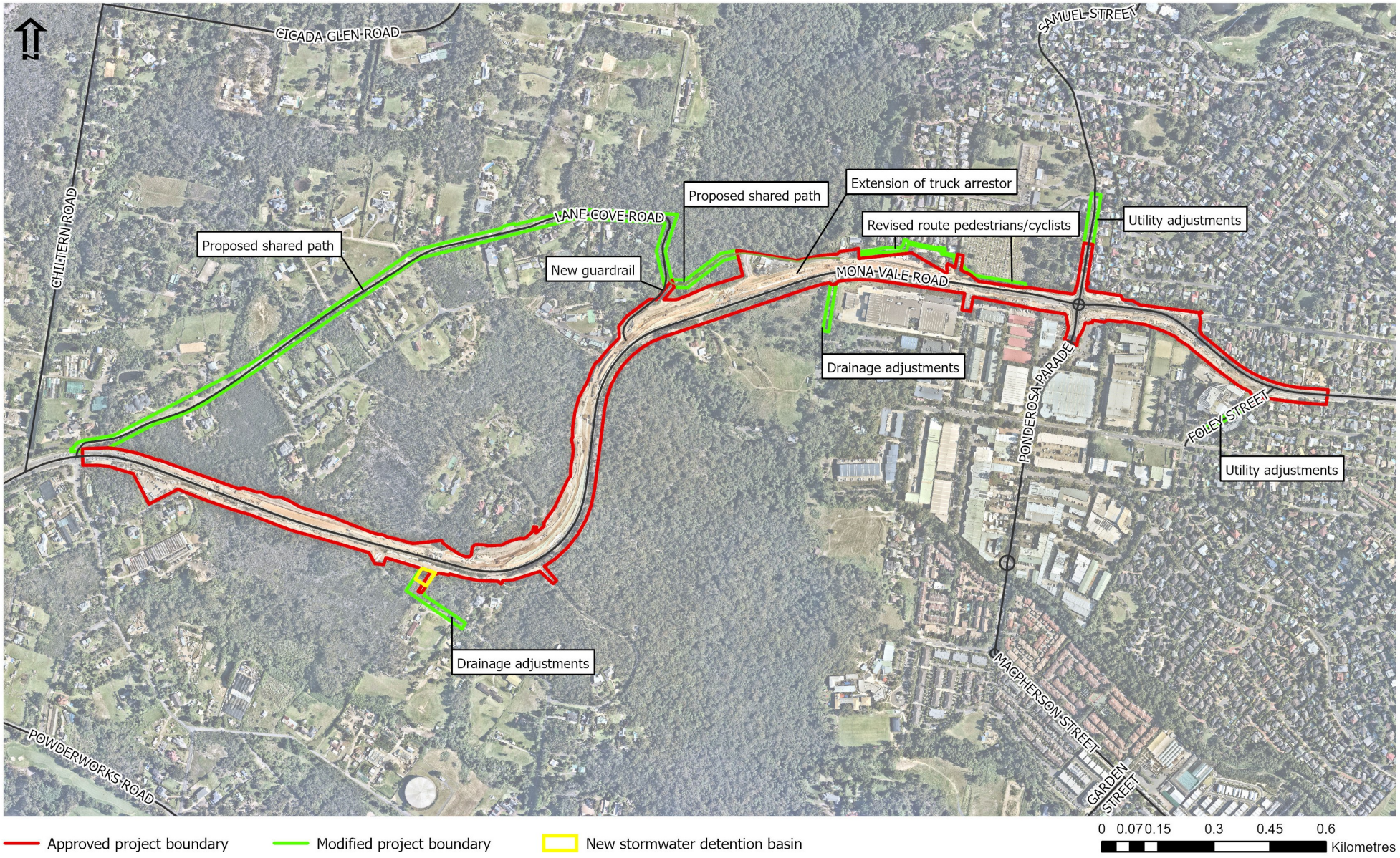

Figure 1-2: The proposed modification

1.2 Purpose of the report

This addendum review of environmental factors (REF) has been prepared by Hills Environmental on behalf of Transport for NSW. For the purposes of these works, Transport for NSW is the proponent and the determining authority under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

This addendum REF is to be read in conjunction with the project REF, submissions report and previous addendum REFs for the project. The purpose of this addendum REF is to describe the proposed modification, to document and assess the likely impacts of the proposed modification on the environment, and to detail mitigation and management measures to be implemented.

The description of the proposed work and assessment of associated environmental impacts has been undertaken in the context of clause 228 of the Environmental Planning and Assessment Regulation 2000, the factors in Is an EIS Required? Best Practice Guidelines for Part 5 of the Environmental Planning and Assessment Act 1979 (Is an EIS required? guidelines) (DUAP, 1995/1996), Roads and Related Facilities EIS Guideline (DUAP 1996), the *Biodiversity Conservation Act 2016* (BC Act), the *Fisheries Management Act 1994* (FM Act), and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

In doing so, the addendum REF helps to fulfil the requirements of:

- Section 5.5 of the EP&A Act including that Transport for NSW examine and take into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of the activity

The findings of the REF would be considered when assessing:

- Whether the proposal is likely to have a significant impact on the environment and therefore the necessity for an environmental impact statement to be prepared and approval to be sought from the Minister for Planning and Public Spaces under Division 5.2 of the EP&A Act
- The significance of any impact on threatened species as defined by the BC Act and/or FM Act, in section 1.7 of the EP&A Act and therefore the requirement for a Species Impact Statement or a Biodiversity Development Assessment Report
- The significance of any impact on nationally listed biodiversity matters under the EPBC Act, including whether there is a real possibility that the activity may threaten long-term survival of these matters, and whether offsets are required and able to be secured
- The potential for the proposal to significantly impact any other matters of national environmental significance or the environment of Commonwealth land and the need, subject to the EPBC Act strategic assessment approval, to make a referral to the Australian Government Department of the Agriculture, Water and the Environment for a decision by the Commonwealth Minister for the Environment on whether assessment and approval is required under the EPBC Act.

2 Need and options considered

2.1 Strategic need for the proposed modification

Chapter 2 of the project REF addresses the strategic need for the project, the project objectives and the options that were considered. The proposed modification described and assessed in this addendum REF is consistent with the strategic need for the project.

The proposed modification reflects further design development of the proposal and respond to opportunities that have arisen since the determination of the project REF. Specifically, the proposed modification:

- Addresses an opportunity to provide a shared path connection along Lane Cove Road, Wallaby Circuit and Walana Crescent following further consultation with Northern Beaches Council. This was originally included in the project REF, but was removed from the scope of the project as documented in the 2017 addendum REF
- Addresses an opportunity (enabled by the redesign of the shared path connection between Mona Vale Road and Lane Cove Road) to further improve safety by extending the length of the truck arrestor bed
- Improves safety through the provision of a guardrail along a bend on Lane Cove Road
- Optimises the drainage design for the project and provides better access for maintenance of the basin near Ingleside Road
- Captured additional utility adjustment requirements.

The proposed shared path along Lane Cove Road, Wallaby Circuit and Walana Crescent would increase a sense of place and provide greater connectivity to existing shared zones within the community areas of Ingleside and Mona Vale.

The section of shared path along Lane Cove Road to Manor Road intersection will be subject to further assessment following the outcome of the final Ingleside precinct rezoning report (March 2021).

2.2 Proposal objectives and development criteria

2.2.1 Proposal objectives

Section 2.3 of the project REF identifies the proposal objectives that apply to the proposed modification.

2.3 Alternatives and options considered

2.3.1 Methodology for selecting the preferred option

The proposed modification involves design refinements. In this context, it was not necessary to consider other broader options. The process of option evaluation had two broad stages:

- A consideration of whether the proposed changes in any configuration can be justified. This is an evaluation of the ‘do nothing’ option
- An evaluation of a proposed modification by reference to the project objectives and its respective impacts and benefits.

2.3.2 Identified options

Transport for NSW investigated the 'do nothing' option and the option of proceeding with each of the elements of the proposed modification.

The alignment of the proposed shared path recognises corridor constraints, a preference for additional pedestrian connectivity away from the Mona Vale Road corridor and the steep descent from the Warriewood Escarpment. An earlier design for the shared path traversed the Katandra Bushland Sanctuary, however the design was revised to avoid the sanctuary following feedback from the Katandra Bushland Sanctuary Trust.

Options considered for the section of the shared path east of the Katandra Bushland Sanctuary included:

- Move the path further north of its original alignment adjacent to the truck arrester bed, with no further changes to the original alignment east of the truck arrester bed
- Move the path further north of its original alignment adjacent to the truck arrester bed and adopt an alignment behind the newly constructed noise wall
- Move the path further north of its original alignment, adopting an alignment along Walana Crescent, using the existing shared zone in Wallaby Circuit and using an existing access road within the southern part of Mona Vale Cemetery.

2.3.3 Analysis of options

The do nothing option was discarded because the proposed modification is better aligned with the project objectives. The proposed modification was selected as the preferred option for the following reasons:

- Enhanced safety with the provision of a longer truck arrestor bed and a guardrail on Lane Cove Road. This aligns with Project Objective 1 (Provide a safe road environment that reduces the frequency and severity of crashes).
- Improved safety and amenity for pedestrians and cyclists with the provision of a shared path away from the Mona Vale Road corridor. This aligns with Project Objective 6 (Contribute to safe and effective pedestrian and cycling infrastructure, that supports local and State Government initiatives for active transport).

The realignment of the shared user path onto Walana Crescent and the existing shared zone on Wallaby Circuit was selected for the following reasons:

- Greater visibility (passive surveillance) for path users consistent with crime prevention through environmental design (CPTED) principles. CPTED aims to create the perception that the risk of committing the crime is greater than the likely benefits, with passive or natural surveillance one of the key principles
- Provision of pedestrian connectivity away from the Mona Vale Road corridor (and the truck arrester bed), which responds to feedback from the Pedestrian Council of Australia and Northern Beaches Council
- Minimal vegetation clearing compared to the alignment to the rear of the noise walls (which would require clearing of trees to ensure appropriate surveillance) and lower levels of impact on the streetscape
- Maintenance of the vegetation screen between residences on Walana Crescent and the newly constructed noise wall to the south
- Minimal disruption for residents, with the shared path expected to be primarily used by residents north of Mona Vale Road and west of Samuel Street, and anyone wishing to access Lane Cove Road through the bushland. Consistent with observations along other sections of Mona Vale Road, commuter cyclists and cycle groups are more likely to use

the new wide shoulders along Mona Vale Road between Manor Road and Daydream Street.

- Maintenance of safety for road users noting the 10 kilometre per hour speed limit on Walana Crescent and Wallaby Circuit.

The optimisation of the drainage design represents a project improvement that can be delivered with minimal adverse impacts.

The additional utility adjustments (Samuel Street and Foley Street) are essential to the delivery of the project.

2.4 Preferred option

The preferred option is to proceed with the elements of the proposed modification as evaluated in Section 2.3.3.

The preferred option would address the identified need. The proposed modification is based on the preferred option and is described in detail in Chapter 3.

3 Description of the proposed modification

3.1 The proposed modification

Transport for NSW proposes to modify the Mona Vale Road East Upgrade project by making several design changes, some of which require adjustments to the approved project boundary. The proposed modification is shown in Figure 1-2.

Key features of the proposed modification would include:

- Modifying the design of and extending the length of the truck arrestor bed
- Provision of additional pedestrian and cycle connectivity away from the Mona Vale Road, including a shared path along Lane Cove Road, Wallaby Circuit and Walana Crescent
- Provision of a guardrail along a section of Lane Cove Road
- Relocation of an operational stage stormwater detention basin and provision of a new concrete-lined drain near Ingleside Road
- Adjustments to the drainage design including the provision of a new concrete pipe and outlet in Boundary Street
- Additional utility adjustments on Samuel Street and Foley Street.

3.2 Design

3.2.1 Design criteria

The design criteria for the proposed modification are generally consistent with Section 3.2.1 of the project REF.

The width of the shared path is proposed to be generally 3.0 metres which is consistent with the desirable minimum width for a shared path as identified in the Guide to Road Design Part 6A: Paths for Walking and Cycling (Austroads, 2017). Sections along the shared path may consist of a narrower width due to topographical constraints and to reduce vegetation clearing, including habitat trees. Reduced widths (to a minimum of 2.0 metres) are permitted under the Guide to Road Design Part 6A: Paths for Walking and Cycling (Austroads, 2017).

Due to the existing steep gradient of Mona Vale Road and its surrounding land and local streets, compliance with *Disability Discrimination Act 1992* standards may not be achieved. Where practical, landings will be provided. The Advisory Note on streetscape, public outdoor areas, fixtures, fittings and furniture (Australian Human Rights Commission, 2013) acknowledges natural topographical features and the nature and use of some outdoor areas will limit the capacity to provide access, but emphasises every effort must be made to provide access short of unjustifiable hardship. Some of the factors relevant to unjustifiable hardship include:

- Technical limits
- Topographical restrictions
- Safety, design and construction issues
- Costs involved in providing access.

3.2.2 Engineering constraints

The engineering constraints for the proposed modification are generally consistent with Section 3.2.1 of the project REF.

3.2.3 Main features of the modification

Truck arrestor bed

The approved proposal includes the provision of a truck arrester bed next to the eastbound lane approaching Walana Crescent, near the bottom of the steep descent. The purpose of the arrester bed is to provide a safe 'escape route' for heavy vehicles with braking problems. The heavy vehicle is safely decelerated and stopped by the drag caused by the vehicle as it sinks into the bed material.

Changes to the alignment of the proposed shared path have created an opportunity to further enhance safety by lengthening the truck arrestor bed by about 100 metres (to a length of about 280 metres). The approved truck arrestor bed is shown in Figure 3-1, while the proposed longer truck arrestor bed is shown in Figure 3-2. A typical cross section is provided in Figure 3-3

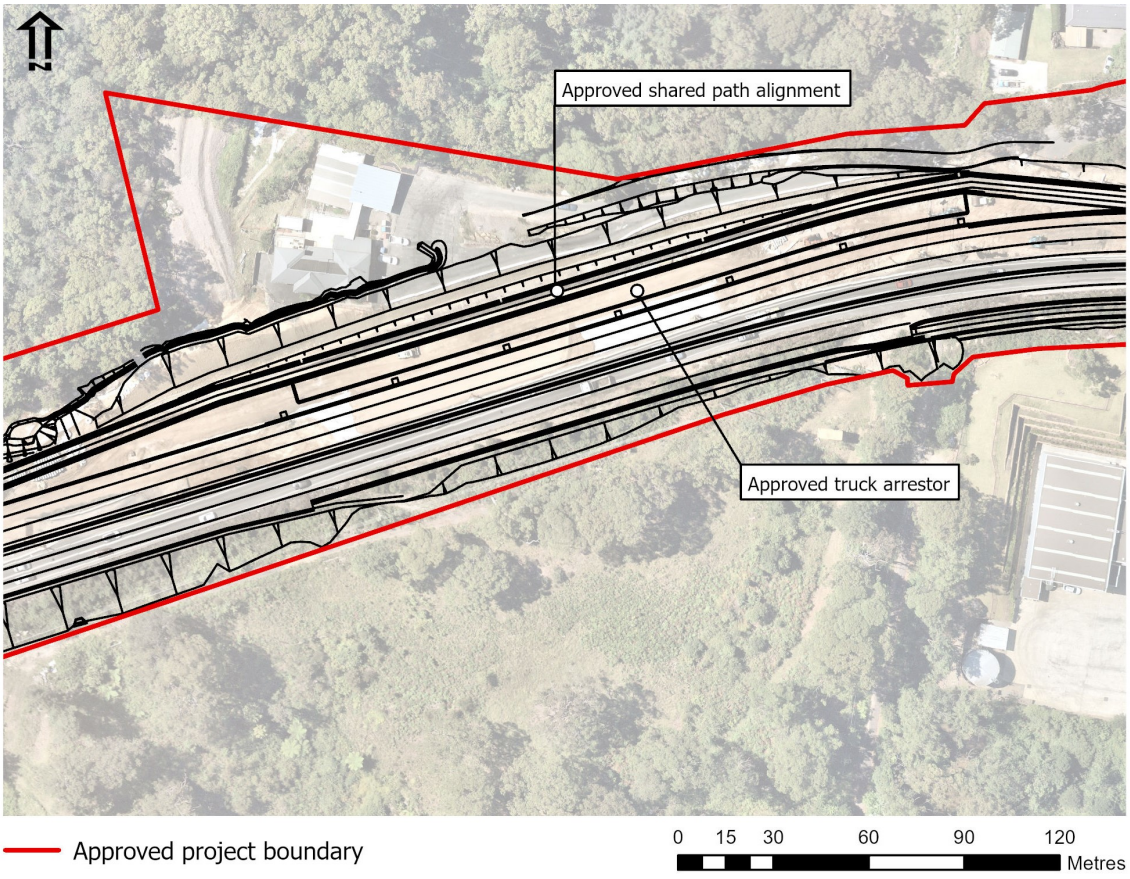

Figure 3-1: Truck arrestor bed – approved project

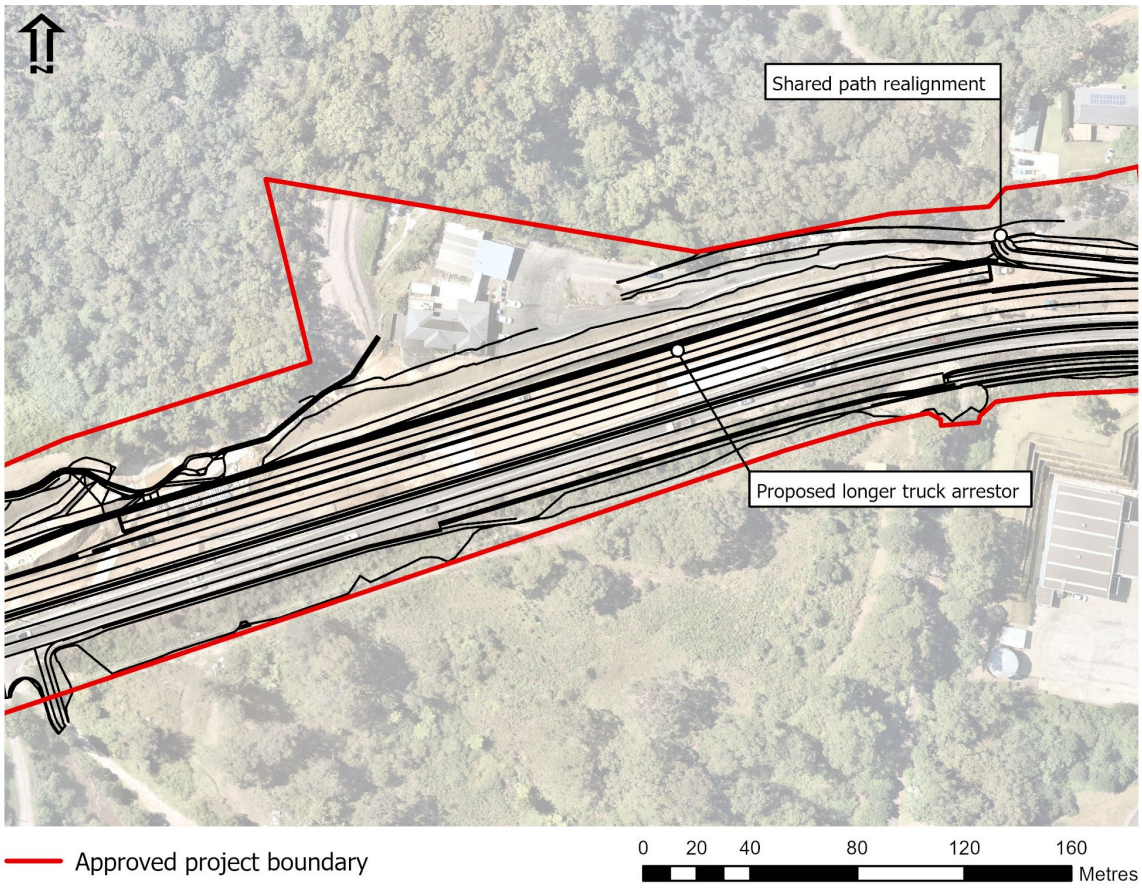

Figure 3-2: Truck arrestor bed – proposed modification

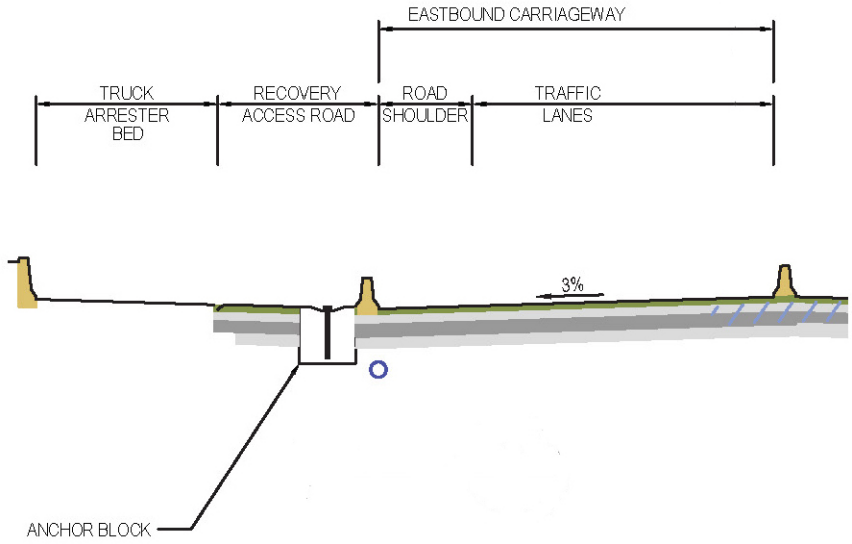

Figure 3-3: Truck arrestor bed – typical cross section

Shared path

The proposed modification includes the provision of additional pedestrian and cycle connectivity away from the Mona Vale Road corridor due to the steep descent from the Warriewood Escarpment. This would include the following:

- New variable width concrete path within the existing Lane Cove Road reservation

- On-road provision shared path (with separation from traffic lane) on Lane Cove Road where verges are narrow
- New variable width concrete path link between Lane Cove Road and Walana Crescent, using structures and/or switchbacks to minimise grades where feasible without the need for large vegetation losses
- Provision of new shared zone and Walana Crescent, and use of existing shared zone on Wallaby Circuit and path connection from Wallaby Circuit to Mona Vale Road
- Provision of shared path, in cooperation with Northern Beaches Council, using existing access road within the Mona Vale Cemetery. The access road pavement would be milled and resheeted and landscape planting would be provided to increase privacy of nearby grave sites.

The shared path route is shown in Figure 1-2. A typical cross section of the proposed shared path is provided in Figure 3-4, while the connection between Lane Cove Road and Walana Crescent is shown in Figure 3-5. The route via Walana Crescent and Wallaby Circuit is shown by Figure 3-6 while the route through Mona Vale Cemetery is shown in Figure 3-9.

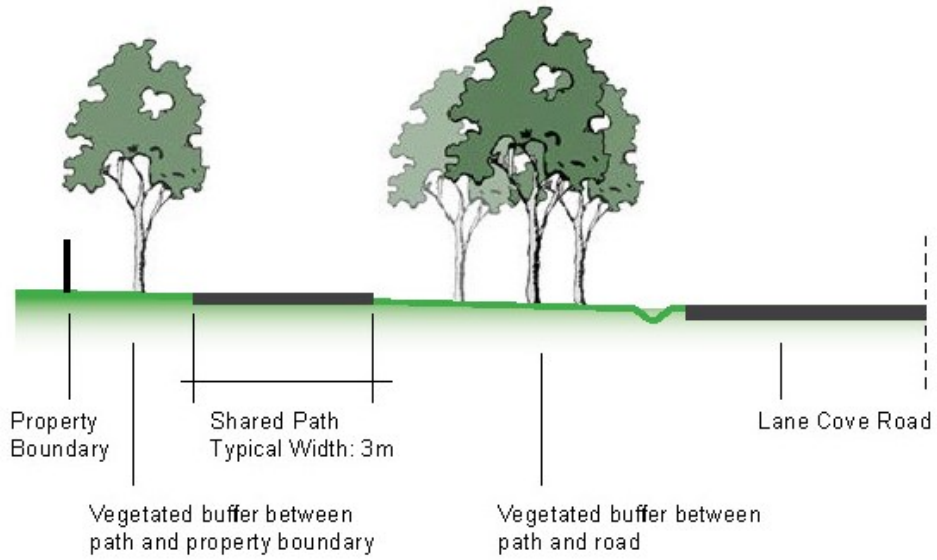

Figure 3-4: Shared path in wide verge – typical cross section

Figure 3-5: Shared path connection between Lane Cove Road and Walana Crescent

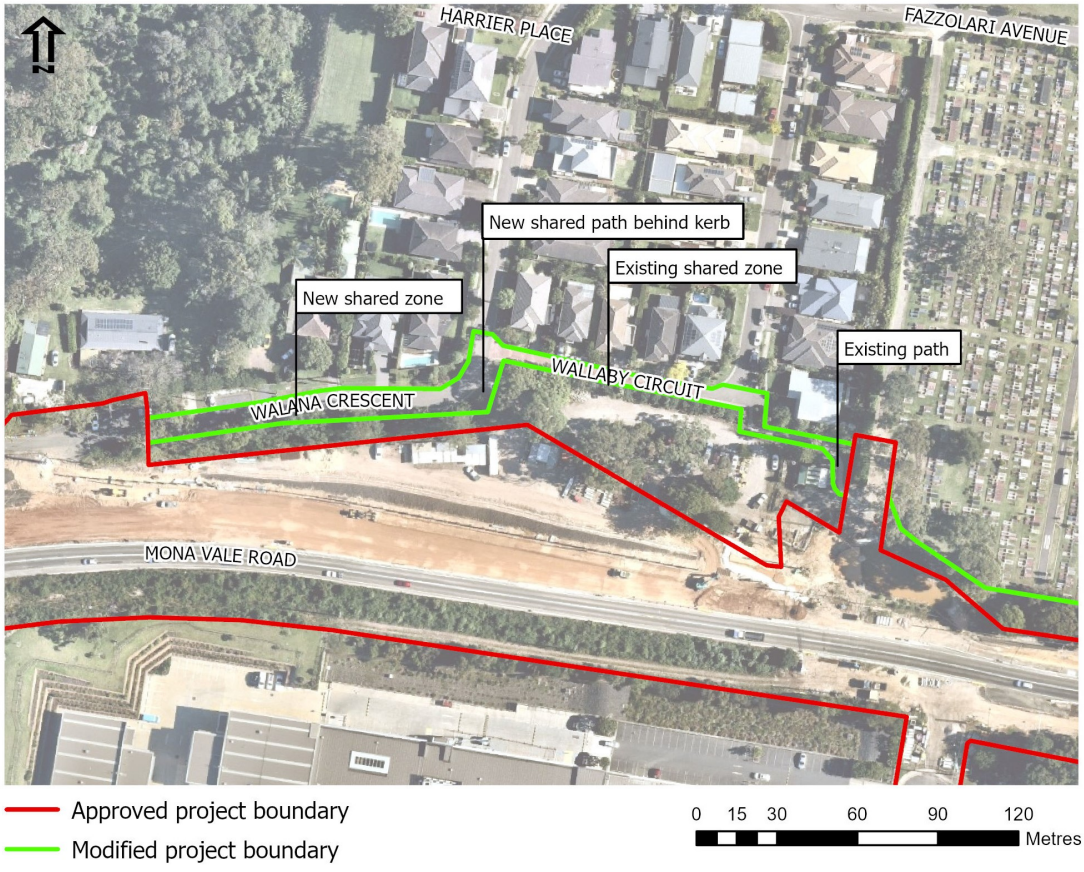

Figure 3-6: Shared path connection – Walana Crescent and Wallaby Circuit

Figure 3-7: Photomontage shared path and shared zone on Walana Crescent

Figure 3-8: Photomontage shared path connection to Wallaby Circuit

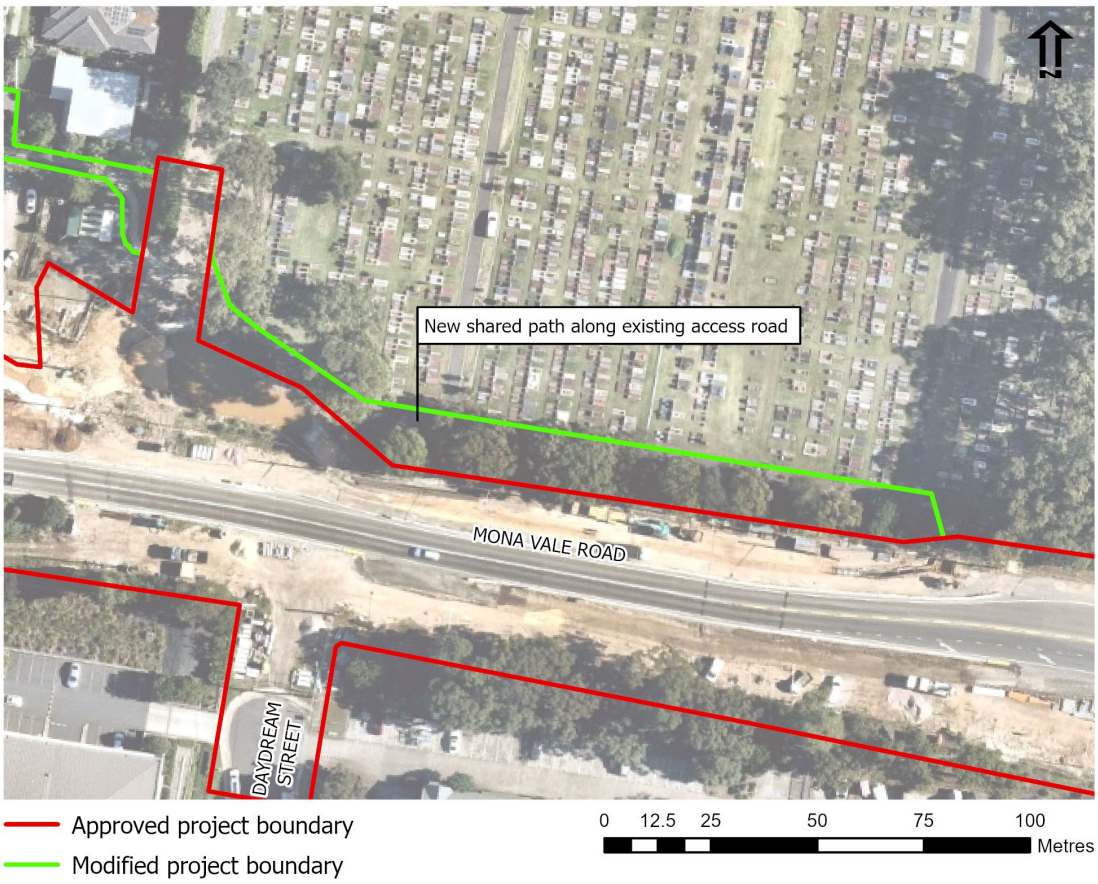

Figure 3-9: Shared path connection – Mona Vale Cemetery

Figure 3-10: Photomontage shared path Mona Vale Cemetery

Figure 3-11: Photomontage shared path connection to Mona Vale Road

Guardrail

To improve safety for road users on Lane Cove Road, a new W-beam guardrail is proposed on the steep descent near the large Mona Vale Road cutting. The proposed extent and alignment of the guardrail is shown in Figure 3-12.

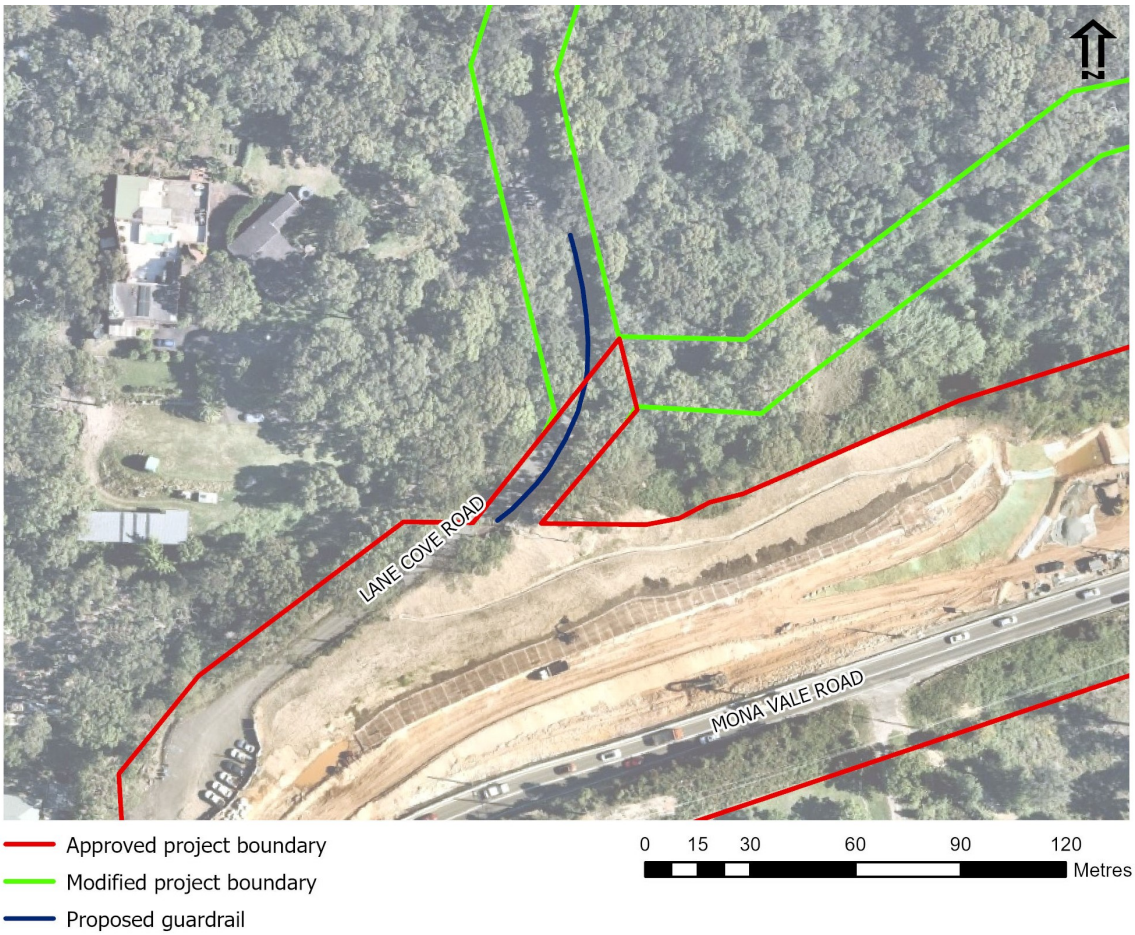

Figure 3-12: Proposed guard rail on Lane Cove Road

Drainage adjustments

As part of the optimisation of the drainage design the following changes are proposed:

- Provision of a new permanent stormwater detention basin between the southern side of Mona Vale Road and Ingleside Road (refer to Figure 3-9). The basin would replace a previously proposed basin on the northern side of Mona Vale Road and would include a 375 millimetre concrete pipe outlet, a basin spillway and associated high bund.
- Provision of a 375 millimetre concrete pipe extending along Ingleside Road for about 110 metres (refer to Figure 3-9).
- Construction of a new 1.5 metre wide 0.25 metre deep concrete lined V-drain along Ingleside Road for about 100 metres (refer to Figure 3-9).
- Provision of a 600 millimetre concrete drainage pipe along Boundary Street and the construction of an associated outlet, including construction of a rip rap (rocky material) apron (refer to Figure 3-14) (no change to the drainage catchment is proposed)
- Extension to the approved project boundary to accommodate the drainage design changes.

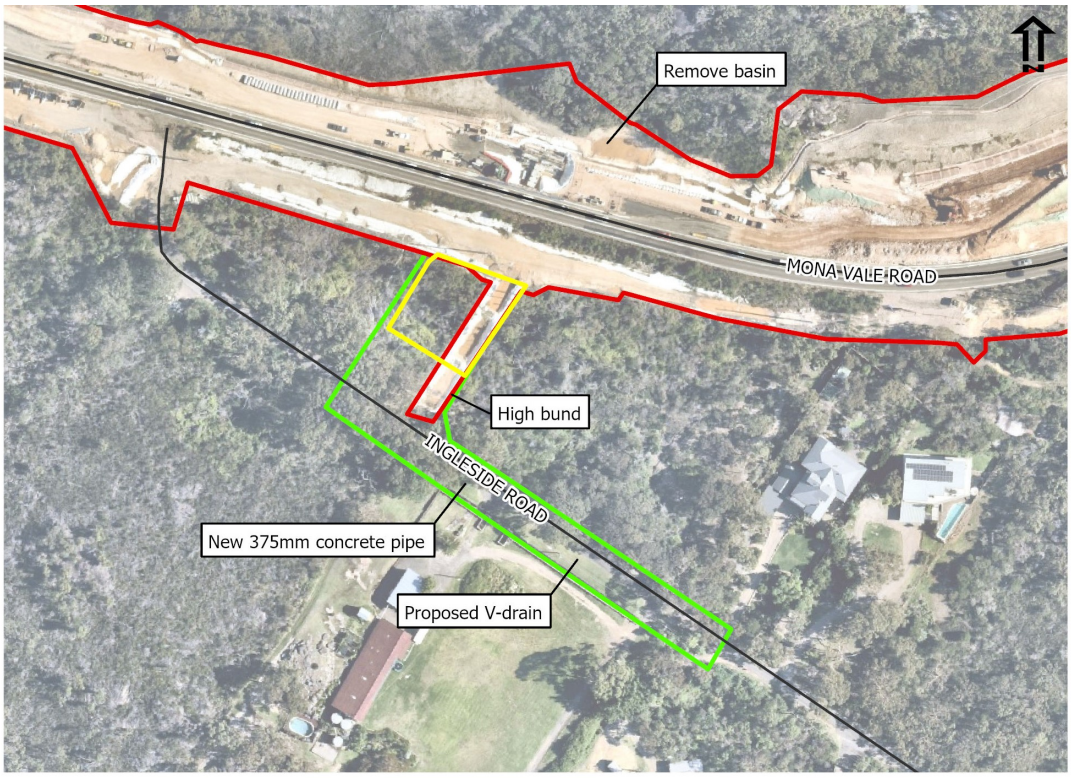

Figure 3-13: Proposed new permanent stormwater detention basin and associated drainage works

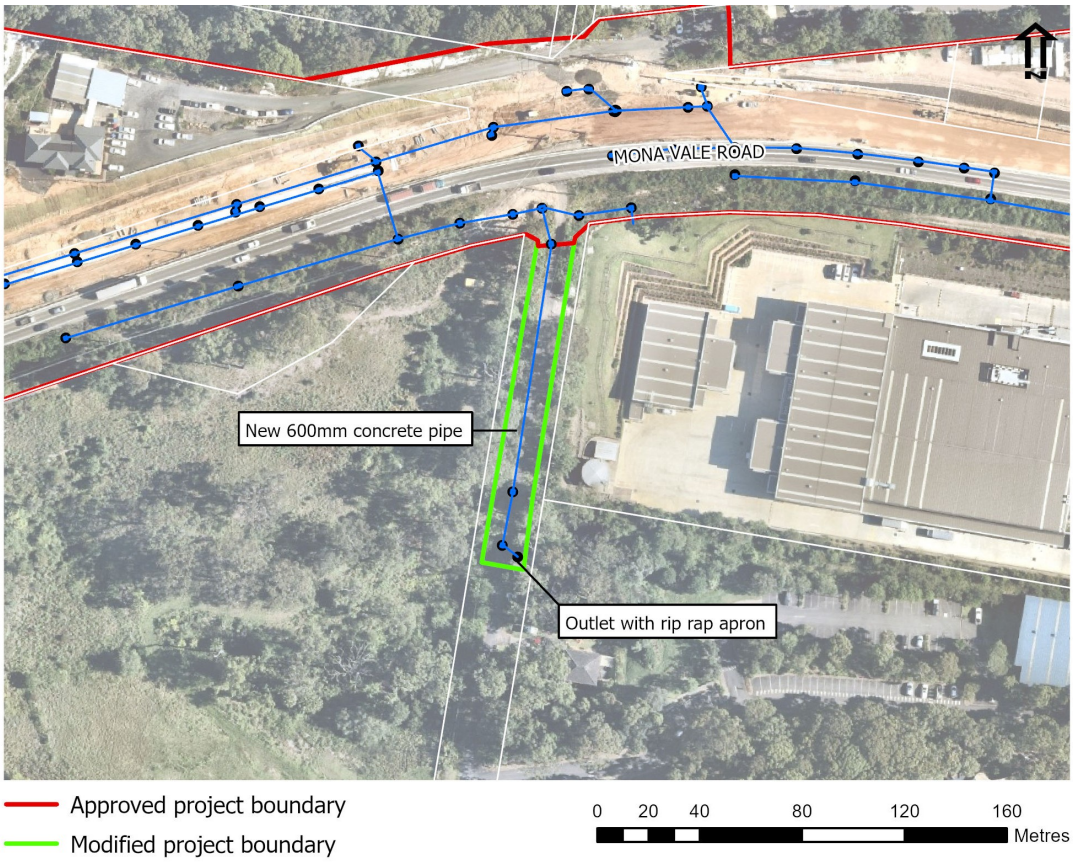

Figure 3-14: Proposed drainage works on Boundary Street

Utility adjustments

The proposed modification includes utility adjustment works (within the extent of the road pavement) on Samuel Street and Foley Street. These adjustment works require an adjustment to the approved project boundary, as shown in Figure 3-15.

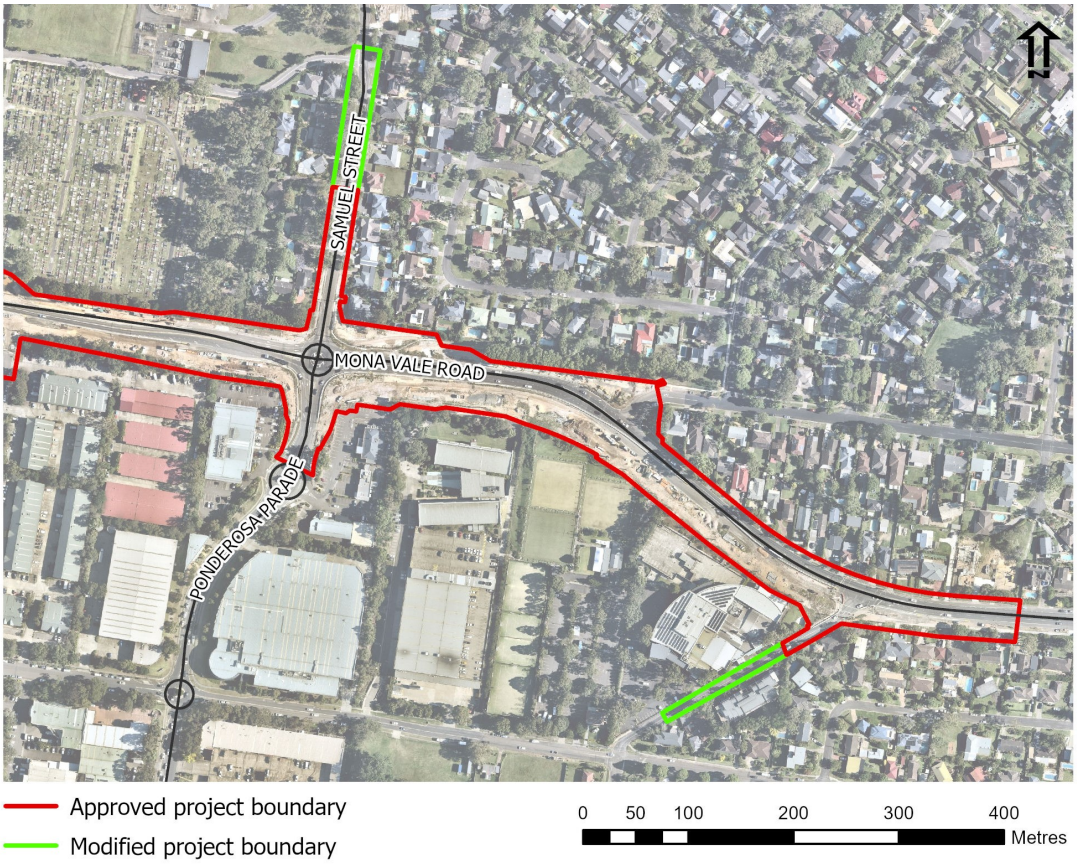

Figure 3-15: Proposed utility adjustments – boundary changes

3.3 Construction activities

3.3.1 Work methodology

The work methodology for the proposed modification would be generally consistent with the description provided in Section 3.3.3 of the project REF.

The construction method for the shared path would generally be as follows:

- Concrete shared path on verge – vegetation removal, excavation to approximately 300 millimetres, placement and compaction of gravel subbase, placement of steel mesh reinforcement, pouring of concrete path sections, concrete curing, line marking, landscape treatments. Alternatives to concrete (such as composite materials) may be used on the steeper sections of the alignment between Walana Crescent and Lane Cove Road.
- On-road shared path – widening of road pavements where required (including leveling, placement of subbase, laying of asphalt pavement), and line marking.

3.3.2 Construction hours and duration

Construction hours would be as described in Section 3.3.4 of the project REF. It is expected that most aspects of the proposed modification (including the proposed shared path) would be carried out during standard construction hours. Utility adjustments are proposed as out-of-hours work.

The proposed modification would not lengthen the duration of the main road upgrade works. A commencement date for the construction of the proposed shared path has not been determined and would be subject to further consultation with Northern Beaches Council.

3.3.3 Plant and equipment

Plant and equipment would be as described in Section 3.3.5 of the project REF.

3.3.4 Earthworks

Earthworks would be generally as described in Section 3.3.6 of the project REF. Earthworks for the proposed modification would involve clearing vegetation, excavation for sections of new concrete shared path, excavation for new operational stormwater detention basin and trenching for drainage pipes and utility adjustments.

3.3.5 Source and quantity of materials

The proposed modification would require small quantities of concrete and select materials. The quantities of material required would not result in a regional or local supply shortage, and none are likely to be in short supply in the foreseeable future. Materials would be sourced from local commercial suppliers where available.

Non-renewable resources such as petroleum fuels would not be used in large quantities.

3.3.6 Traffic management and access

Traffic management and access would be generally as described in Section 3.3.8 of the project REF. The shared path on Lane Cove Road, Wallaby Circuit and Walana Crescent can be constructed under traffic control. Access to properties would be maintained during construction.

3.4 Ancillary facilities

Ancillary facilities would be consistent with Section 3.4 of the project REF and Section 2.2.10 of the 2017 Addendum REF. Temporary amenities for workers (lunch shed, portable toilets) may be provided for on Lane Cove Road as needed.

3.5 Public utility adjustment

The proposed modification includes utility adjustments on Foley Street and Samuel Street as described in Section 3.2.

3.6 Property acquisition

Additional property acquisition is not required for the proposed modification.

4 Statutory planning framework

4.1 Environmental Planning and Assessment Act 1979

4.1.1 State Environmental Planning Policies

State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (ISEPP) aims to facilitate the effective delivery of infrastructure across the State.

Clause 94 of ISEPP permits development on any land for the purpose of a road or road infrastructure facilities to be carried out by or on behalf of a public authority without consent.

As the proposed modification is for a road and road infrastructure facilities and is to be carried out by Transport for NSW, it can be assessed under Division 5.1 of the *Environmental Planning and Assessment Act 1979*. Development consent from council is not required.

The proposed modification is not located on land reserved under the *National Parks and Wildlife Act 1974* and does not require development consent or approval under State Environmental Planning Policy (Coastal Management) 2018, State Environmental Planning Policy (State and Regional Development) 2011 or State Environmental Planning Policy (State Significant Precincts) 2005.

Part 2 of ISEPP contains provisions for public authorities to consult with local councils and other public authorities prior to the commencement of certain types of development. Consultation, including consultation as required by ISEPP (where applicable), is discussed in Chapter 5 of this REF.

State Environmental Planning Policy (Koala Habitat Protection) 2019

The project REF considered State Environmental Planning Policy No.44 – Koala Habitat Protection, which has now been replaced by State Environmental Planning Policy (Koala Habitat Protection) 2019 (Koala Habitat SEPP).

The Koala Habitat SEPP aims to encourage the conservation and management of areas of natural vegetation that provide habitat for koalas to ensure a permanent free-living population over their present range and reverse the current trend of koala population decline. The Koala Habitat SEPP applies to a range of local government areas including Northern Beaches.

Part 2 of the Koala Habitat SEPP regulates impact on koala habitats. While the SEPP does not affect the permissibility of the proposed modification as a Division 5.1 or 5.2 assessment, consideration has been given to the proposal's impact on koala habitat. The Biodiversity Assessment (refer to Section 6.1) notes that appropriate feed trees are not present Koalas have not been previously recorded at the proposed modification site.

4.1.2 Local Environmental Plans

The discussion of the Pittwater Local Environmental Plan 2014 in Section 4.2 of the project REF remains applicable to the proposed modification.

4.2 Other relevant NSW legislation

4.2.1 Protection of the Environment Operations Act 1997

Part 3.2 of the *Protection of the Environment Operations Act 1997* (POEO Act) requires an environmental protection licence for scheduled development work and the carrying out of scheduled activities (as set out in Schedule 1 of the POEO Act), which includes road

construction. The project is subject to Environment Protection Licence 21037 issued to Georgiou Group Pty Ltd.

4.2.2 Biodiversity Conservation Act 2016

The project REF considered the Threatened Species Conservation Act 1995 which has now been repealed and replaced by the *Biodiversity Conservation Act 2016* (BC Act).

The BC Act seeks to conserve biological diversity and promote ecologically sustainable development; to prevent extinction and promote recovery of threatened species, populations and ecological communities; and to protect areas of outstanding biodiversity value.

The BC Act provides a listing of threatened species, populations and ecological communities, areas of outstanding biodiversity value, and key threatening processes.

Part 7 of the BC Act requires that the significance of the impact on threatened species, populations and endangered ecological communities listed under the BC Act or *Fisheries Management Act 1994*, are assessed using a five-part test. Where a significant impact is likely to occur, a Species Impact Statement or Biodiversity Development Assessment Report (BDAR) must be prepared.

An assessment of the potential impact on biodiversity is provided in Section 6.1.

4.2.3 Biosecurity Act

Under the *Biosecurity Act 2015*, which came into effect on 1 July 2017 and repealed the *Noxious Weeds Act 1993*, 'all plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable'.

The potential impacts and relevant safeguards are discussed further in Section 6.1. Appropriate biosecurity controls would be put in place for the proposed modification to minimise the risk of weed transfer.

4.3 Commonwealth legislation

4.3.1 Environment Protection and Biodiversity Conservation Act 1999

Under the EPBC Act a referral is required to the Australian Government for proposed 'actions that have the potential to significantly impact on matters of national environmental significance or the environment of Commonwealth land. These are considered in Appendix A and chapter 6 of the addendum REF.

A referral is not required for proposed road actions that may affect nationally listed threatened species, endangered ecological communities and migratory species. This is because requirements for considering impacts to these biodiversity matters are the subject of a strategic assessment approval granted under the EPBC Act by the Australian Government in September 2015.

Potential impacts to these biodiversity matters are also considered as part of Chapter 6 of the addendum REF and Appendix A.

Findings – matters of national environmental significance

The assessment of the proposed modification's impact on matters of national environmental significance and the environment of Commonwealth land found that there is unlikely to be a significant impact on relevant matters of national environmental significance or on Commonwealth land. Accordingly, the proposal has not been referred to the Australian Government Department of Agriculture, Water and the Environment under the EPBC Act.

4.4 Confirmation of statutory position

The proposed modification is categorised as development for the purpose of a road and/or road infrastructure facilities and is being carried out by or on behalf of a public authority.

Under clause 94 of ISEPP the proposed modification is permissible without consent. The proposed modification is not State significant infrastructure or State significant development. The proposed modification can be assessed under Division 5.1 of the EP&A Act. Consent from Council is not required.

A referral to Australian Government Department of Agriculture, Water and the Environment under the EPBC Act is not required.

5 Consultation

5.1 Consultation strategy

The consultation strategy relevant to the proposed modification remains consistent with Section 5.1 of the project REF.

5.2 Consultation outcomes

A range of consultation activities have been carried out with the community and affected stakeholders since the project REF and Submissions Report were prepared and following the start of construction.

Transport for NSW has met with affected residents, property owners, businesses, Council and interest groups, and the wider community have been informed of project updates via website content and newsletters distributed via letterbox.

Targeted consultation with potentially affected residents (via a letterbox drop) has also occurred. The main issues raised by respondents and the Transport for NSW response to those issues are provided in Table 5-1.

Table 5-1: Targeted consultation – issues and responses

Issue	Response
Query as to why the alignment of the shared path has changed from that proposed in the Submissions Report.	The current proposal responses to stakeholder feedback (including from the Pedestrian Council of Australia) indicating that the shared path should be adequately separated from the truck arrestor bed. The proposed modification allows the provision of pedestrian and cycle connectivity away from the Mona Vale Road. Refer to Section 2.3 for further detail on the shared path alignment options considered.
Query about the location of the proposed shared path on Lane Cove Road and the timing of construction	The shared path is planned for the northern side of Lane Cove Road. Construction of the shared path on Lane Cove Road is not part of the Mona Vale Road East construction works, and timing of its construction is subject to Northern Beaches Council's works program.
Request for clarification about impacts on Katandra Bushland Sanctuary, vegetation removal and path materials through the bushland area.	The proposed shared path does not encroach the Katandra Bushland Sanctuary. The route of the shared path through the bush is about 230 metres long and the path would be up to three metres wide with an additional two metre buffer zone. Biodiversity impacts are considered in Section 6.1. Impacts on large trees will be minimised where possible. The material for the shared path through the bushland is still to be determined. A composite material is currently being considered.
Query about shared path route details and tree removal on Wallaby Circuit and Walana Crescent.	Details of the shared path route on Wallaby Circuit and Walana Crescent are provided in Section 3.2.3. Some removal of shrubs and grasses on the southern side of Walana Crescent, west of

Issue	Response
	Wallaby Circuit would be required. Mature trees are not expected to be affected.
Concern about safety associated vehicles mixing with pedestrians/cyclists on Walana Crescent.	The subject part of Walana Crescent has a speed limit of 10 kilometres per hour. It is considered that safety can be maintained in this low speed environment. Additional signage would be provided where required.

ISEPP consultation was carried out during the preparation of the project REF. The proposed modification does not trigger the need for any further consultation with Council or with any other government agencies. The design of the proposed shared path is being developed in consultation with Northern Beaches Council.

5.3 Ongoing or future consultation

The addendum REF will be publicly displayed for comment in August and September 2021. Following the public display of the addendum REF, all comments received would be recorded and addressed in a Submissions Report detailing how each issue raised would be considered in finalising the proposal design. The Submissions Report will be made available to the public on the project webpage on the Transport for NSW website.

The following ongoing consultation would also be carried out:

- Consultation with community stakeholders to assist in managing impacts during construction
- Follow-up meetings to discuss access arrangements with directly affected property owners
- Ongoing updates to the community during construction
- Ongoing consultation with Northern Beaches Council and other relevant government agencies
- Continuation of the 24-hour project information telephone number and project website for the duration of construction.

6 Environmental assessment

This section of the addendum REF provides a detailed description of the potential environmental impacts associated with the construction and operation of the proposed modification of the Mona Vale Road East Upgrade. All aspects of the environment potentially impacted by the proposed modification are considered. This includes consideration of:

- Potential impacts on matters of national environmental significance under the EPBC Act
- The factors specified in the guidelines Is an EIS required? (Department of Planning, 1995) as required under clause 228(1) of the Environmental Planning and Assessment Regulation 2000 and the Roads and Related Facilities EIS Guideline (Department of Urban Affairs and Planning, 1996). The factors specified in clause 228(2) of the Environmental Planning and Assessment Regulation 2000 are also considered in Appendix A.

Site-specific safeguards and management measures are provided to mitigate the identified potential impacts.

6.1 Biodiversity

A Biodiversity Assessment was carried out for the proposed modification by EMM. The main findings of the assessment are summarised below while the full report is included in Appendix A of this addendum REF.

6.1.1 Methodology

A desktop assessment was initially carried out to identify any threatened species, populations or communities listed under the BC Act or EPBC Act which were present or likely to occur (i.e. have a moderate to high likelihood of occurring in the area affected by the proposed modification. The following sources were reviewed:

- Google Earth aerial images for the study area and locality
- Commonwealth Department of the Agriculture, Water and the Environment Protected Matters Search Tool for matters protected by the EPBC Act
- NSW Department of Planning, Industry and Environment BioNet system, for items listed under the BC Act to access the following:
  - Threatened species profiles
  - BioNet Atlas data (10 kilometre buffer of the site)
  - BioNet Vegetation Information System

Native vegetation at the proposed modification site was assessed and mapped during a site visit on 27 October 2020. The NSW BioNet Vegetation Classification system was used to identify and align the vegetation within the site to Plant Community Types (PCTs). PCTs were stratified into vegetation zones based on broad condition state using the definitions.

Concurrent with the vegetation mapping, a habitat assessment was carried out to identify the following fauna habitat features within the development site:

- Habitat trees including large hollow-bearing trees
- Availability of flowering shrubs and feed tree species
- Waterway condition and potential frog breeding areas
- Quantity of ground litter and logs

- Searches for indirect evidence of fauna.

6.1.2 Existing environment

Vegetation

The PCTs identified within the Biodiversity Assessment study area are identified below in Table 6-1 and shown in Figure 6-1.

Table 6-1: PCTs at the proposed modification site

PCT ID	PCT name	Condition	Area (ha)
-	Urban exotic/native	-	0.96
1250	Sydney Peppermint – Smooth-bark Apple – Red Bloodwood shrubby open forest on slopes of moist sandstone gullies, eastern Sydney Basin Bioregion.	High Medium	0.30 0.16
1565	Turpentine - Rough-barked Apple - Forest Oak moist shrubby tall open forest of the Central Coast	Medium	0.33
1776	Smooth-barked Apple - Red Bloodwood open forest on enriched sandstone slopes around Sydney and the Central Coast	High	0.60
1783	Red Bloodwood – Scribbly Gum / Old-man Banksia open forest on sandstone ridges of northern Sydney and Central Coast.	High Medium Poor Derived native grassland	0.17 0.16 0.21 0.02
1824	Mallee – Banksia – Tea-tree – Hakea heath woodland of the coastal sandstone plateaus of the Sydney Basin.	High Medium	0.87 0.28
1841	Smooth-barked Apple - Turpentine - Blackbutt tall open forest on enriched sandstone slopes and gullies of the Sydney region.	High	1.06
-	Cleared	-	1.70

There are currently no threatened ecological communities associated with any of the PCTs identified at the proposed modification site.

Figure 6-1: Vegetation, flora and fauna habitat

Threatened flora

The desktop assessment identified six threatened flora species with a moderate to high likelihood of occurring at the proposal site:

- Angus's Onion Orchid (*Microtis angusii*)
- Caley's Grevillea (*Grevillea caleyi*)
- Epacris purpurascens var. purpurascens
- Heart-leaved Stringybark (*Eucalyptus camfieldii*)
- Netted Bottle Brush (Callistemon *linearifolius*)
- *Tetratheca glandulosa*.

Angus's Onion Orchid was identified at various locations along Lane Cove Road and Ingleside Road during the site visit (refer to Figure 6-1).

Threatened fauna habitat

The fauna habitat assessment identified the following:

- Several areas of appropriate Eastern Pygmy-possum habitat along bushland adjacent to Lane Cove Road and within the Katandra Bushland Sanctuary
- Several sandstone overhangs and small caves within the Katandra Bushland Sanctuary
- Red-crowned toadlet habitat, including several small ephemeral creeks and stormwater run off with a series of shallow pools within Katandra Bushland Sanctuary and running adjacent to the road on Ingleside Road. A single adult Red-crowned toadlet was recorded calling in the stormwater runoff line adjacent to Ingleside Road. A large artificial dam between Walana Crescent and Lane Cove Road (refer to Figure 6-1) may provide habitat for other threatened frog species
- *Allocasuarina* sp. were identified throughout the northern areas of the Katandra Bushland Sanctuary which may be a foraging resource for Glossy Black-Cockatoo
- No large hollow-bearing trees, appropriate ground litter or log habitat, termite mounds or indirect evidence of fauna at the proposed modification site
- No biodiversity impacts or constraints at the proposed modification sites on Boundary Street, Samuel Street or Foley Street.

6.1.3 Potential impacts

The proposed modification would result in additional clearing of native vegetation on Lane Cove Road, between Walana Crescent and Lane Cove Road and along Ingleside Road. None of the native vegetation affected conforms to a threatened ecological community listed by the BC Act or EPBC Act.

The proposed modification has the potential to affect Angus's Onion Orchid individuals along Lane Cove Road and Ingleside Road.

The proposed modification has the potential to affect Eastern Pygmy-possum, Red-crowned toadlet, and Glossy Black-Cockatoo habitat on Lane Cove Road, between Walana Crescent and Lane Cove Road and along Ingleside Road.

Conclusion on significance of impacts

The Biodiversity Assessment concludes that with the implementation of the recommended safeguards and management measures, the proposed modification is not likely to significantly

impact threatened species, populations or ecological communities or their habitats, within the meaning of the BC Act or FM Act and therefore a Species Impact Statement (or Biodiversity Development Assessment Report) is not required.

The proposed modification is not likely to significantly impact threatened species, populations, ecological communities or migratory species, within the meaning of the EPBC Act.

6.1.4 Safeguards and management measures

Table 6-2: Biodiversity environmental management measures

Impact	Environmental safeguards	Responsibility	Timing	Reference
Loss of native vegetation	Design of the shared path will avoid removal of vegetation along Lane Cove Road where reasonable and feasible. If vegetation removal cannot be avoided, the footprint will be minimised, and the retention of large canopy trees will be prioritised.	Contractor	Construction	Additional measure
Direct impacts on Angus's Onion Orchid	Removal of Angus's Onion Orchid (*Microtis angusii*) along Lane Cove Road and Ingleside Road will be avoided where reasonable and feasible. If Angus's Onion Orchid individuals are impacted by the proposed modification, offsets will be provided in accordance with the Guideline for Biodiversity Offsets (Roads and Maritime Services, 2016).	Transport for NSW	Construction	Additional measure
Impacts to Eastern Pygmy-possum, Red-crowned toadlet, and Glossy Black-Cockatoo habitat	The shared path will avoid impacts on potential Eastern Pygmy-possum, Red-crowned toadlet, and Glossy Black-Cockatoo habitat within the Katandra Bushland Sanctuary and will avoid the identified artificial dam between Walana Crescent and Lane Cove Road.	Transport for NSW	Construction	Additional measure
Impacts to Red-crowned toadlet habitat	The extension of stormwater line and relocation of the stormwater detention basin along Ingleside Road will avoid and/or minimise impacts on Red-crown toadlet habitat and existing water flow through the current stormwater runoff pathways.	Transport for NSW	Construction	Additional measure

6.2 Aboriginal heritage

6.2.1 Methodology

The approach to the assessment of potential Aboriginal heritage impacts has involved a review of the Aboriginal Archaeological Survey Report prepared as part of the project REF. This review was supported by an updated Aboriginal Heritage Information Management System (AHIMS) search conducted on 10 February 2021.

Advice from the Transport for NSW Aboriginal Cultural Heritage Officer was also sought.

6.2.2 Existing environment

The AHIMS search returned 22 known Aboriginal sites within a broader search area. None of the AHIMS sites are within the proposed modification footprint. Several rock engraving sites (45-6-0071, 45-6-0072, 45-6-2528 and 45-6-2520) are located adjacent to the proposed modification footprint on the southern side of Lane Cove Road near its western intersection with Mona Vale Road.

The Aboriginal Archaeological Survey Report (included as part of the project REF) discusses a number of sites identified by the Department of Main Roads (DMR) Mona Vale Road Strategic Design Plan (1970), some of which are not registered on the AHIMS. Of those sites, one (DMR5) is within the proposed modification footprint (on Lane Cove Road near the proposed connection to Walana Crescent).

6.2.3 Potential impacts

The proposed modification is not expected to impact Aboriginal heritage sites. Safeguards and management measures have been proposed to ensure impacts are avoided.

Transport for NSW has determined that it is not necessary to proceed to Stage 2 of the Transport for NSW Procedure for Aboriginal Cultural Heritage Consultation and Investigation (refer to Appendix D).

6.2.4 Safeguards and management measures

Table 6-3: Aboriginal cultural heritage environmental management measures

Impact	Environmental safeguards	Responsibility	Timing	Reference
Impacts on known Aboriginal sites	Further archaeological investigation will be carried out to confirm the location of unregistered Aboriginal site DMR5. This site will be protected during construction.	Transport for NSW Contractor	Construction	Additional measure

6.3 Landscape character and visual amenity

6.3.1 Methodology

The methodology used for visual impact assessment of the proposed modification is consistent with the Environmental Impact Assessment Practice Note: Guidelines for Landscape Character and Visual Impact Assessment (Transport for NSW, 2020).

The guidelines establish an assessment process with reference to the sensitivity of an area and magnitude of the proposal in that area.

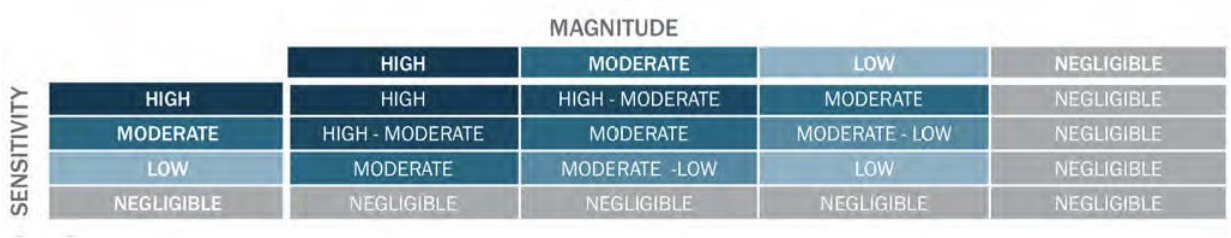

Figure 6-2: Landscape character and visual impact assessment matrix

The landscape character assessment determines the impact of the proposal on the area's character and sense of place, while the visual impact assessment determines the impact of a proposal on key existing views.

For the assessment of the proposed modification landscape character zones referred to on the project REF have been adopted. Viewpoints from the project REF have also been adopted with additional viewpoints added as appropriate.

6.3.2 Existing environment

The existing environment for the proposed modification is consistent with the description in Section 6.7.2 of the project REF.

The proposed modification would occur within most of the landscape character zones identified in the project REF, as shown in Table 6-4 (refer also to Figure 6-13 in the project REF). Table 6-28 in the project REF provides descriptions of each character zone.

Table 6-4: Landscape character zones affected by the proposed modification

No	Name	Modification elements	Sensitivity
1	Ingleside Residential	Shared path	Low
2	Ingleside Valley	New detention basin on Ingleside Road	Low
3	Ingleside Plateau	Shared path	Moderate
4	Warriewood Escarpment	Shared path Truck arrestor bed	High
5	Lower escarpment and future residential development	Truck arrestor bed	Low
6	Mona Vale commercial	Drainage adjustments (Boundary Street)	Low
7	Mona Vale Residential	Utility adjustments (Samuel Street and Foley Street)	Moderate

The proposed modification would affect some of the viewpoints assessed in the project REF, while additional viewpoints have also been included for assessment (refer below to Table 6-5 and to Figure 6-3). No viewpoints have been included for the utility adjustments on Samuel Street and Foley Street as the visual effect of these works is considered negligible.

Table 6-5: Viewpoints assessed for the proposed modification

No	Description	Sensitivity
11	Project REF viewpoint. View east along Mona Vale Road from the junction with Lane Cove Road.	High
12	Project REF viewpoint. View north along Boundary Street.	Low
31	Additional viewpoint. View east along Lane Cove Road from near the Ingleside Road intersection.	Moderate
32	Additional viewpoint. View east from Lane Cove Road near the Katandra Bushland Sanctuary	Moderate
33	Additional viewpoint. View west along Ingleside Road.	Moderate
34	Additional viewpoint. Views along Walana Crescent and Wallaby Circuit	Moderate
35	Additional viewpoint. Views within Mona Vale Cemetery	Moderate

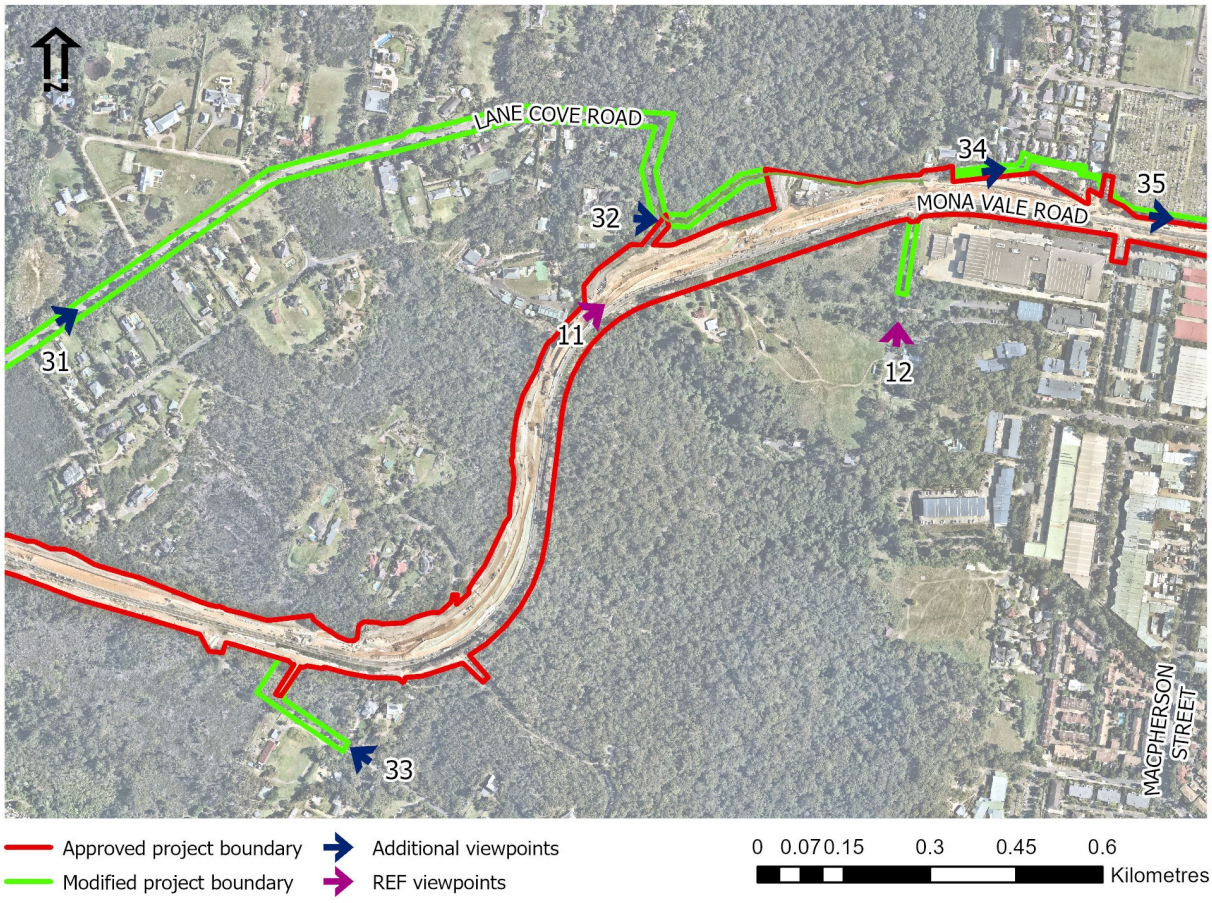

Figure 6-3: Viewpoints assessed for the proposed modification

6.3.3 Potential impacts

The proposed modification represents a relatively small incremental change to the approved project and would not affect the landscape character impact ratings included Table 6-29 of the project REF. The landscape character ratings and associated assessment for the proposed modification are included below in Table 6-6.

Table 6-6: Landscape character assessment (project inclusive of proposed modification)

No	Name	Sensitivity	Magnitude	Impact	Comment
1	Ingleside Residential	Low	Low	Low	The proposed shared path would result in a change to the streetscape along Lane Cove Road and would serve to increase the activation of this area. The magnitude of change is still considered low given shared path is consistent with the current local road character.
2	Ingleside Valley	Low	Low	Low	The proposed shared path would result in a change to the streetscape along Lane Cove Road and would serve to increase the activation of this area. The magnitude of change is still considered low given shared path is consistent with the current local road character.
3	Ingleside Plateau	Moderate	Moderate	Moderate	The effect of the proposed modification would be negligible within this zone and does not alter the project REF assessment.
4	Warriewood Escarpment	High	Moderate	Moderate-High	The effect of the proposed modification would be negligible within this zone and does not alter the project REF assessment
5	Lower escarpment and future residential development	Low	Moderate	Moderate - Low	The effect of the proposed modification would be negligible within this zone and does not alter the project REF assessment
6	Mona Vale commercial	Low	Low	Low	The effect of the proposed modification would be negligible within this zone and does not alter the project REF assessment
7	Mona Vale Residential	Moderate	Moderate	Moderate	The effect of the proposed modification would be negligible within this zone and does not alter the project REF assessment
8	Mona Vale Cemetery	High	Low	Moderate	While the proposed shared path would encroach this zone, there would be minimal physical change and usage would be similar to the existing.

The proposed modification would not obscure or reduce the quality of any scenic views and would have minimal impact on assessed viewpoints. Table 6-7 provides an assessment of the project (inclusive of the proposed modification) for key viewpoints.

Table 6-7: Visual impact assessment for the proposed modification

No	Sensitivity	Magnitude	Impact	Comment
11	High	Moderate	Moderate-High	No change to the project REF assessment with the inclusion of a longer truck arrestor bed.
12	Low	Moderate	Moderate - Low	No change to the project REF assessment. Additional impacts on this view (north along Boundary Street) would be limited to the construction period (trenching for drainage works).
31	Moderate	Low	Moderate-Low	The shared path along Lane Cove Road (and removal of some vegetation) would be noticeable from this viewpoint but would not substantially alter the nature of the view.
32	Moderate	Moderate	Moderate	The removal of vegetation for the shared path connection between Lane Cove Road and Walana Crescent would open up this view to the east. This effect would be permanent and drives the moderate impact rating.
33	Moderate	Low	Moderate-Low	The new basin would be visible from this viewpoint but would not be a dominant visual feature once disturbed areas have been stabilised. Existing vegetation screens the proposed basin site from nearby residences.
34	Moderate	Low	Moderate-Low	The new shared path and shared zone on Walana Crescent is consistent with the character of a local road and would not involve any tall or bulky elements that could obstruct views.
35	Moderate	Low	Moderate-Low	The path alignment would be visibly similar to the existing access road. Planting would delineate the path from area where graves are positioned.

6.3.4 Safeguards and management measures

Safeguards VA-1 to VA-4 are considered adequate to address the landscape character and visual impacts of the proposed modification. No additional measures are proposed.

6.4 Other impacts

6.4.1 Existing environment and potential impacts

Table 6-8: Existing environment and potential impacts – other issues

Environmental factor	Existing environment	Potential impacts
Landform, geology and soils	Landform, geology and soils relevant to the proposed modification is consistent with that described in section 6.2.2 of the project REF.	The proposed modification would involve some disturbance of soils located largely in disturbed road reserve for the shared path, drainage improvements and utility adjustments. The location of the truck arrestor bed is already disturbed as a result of road construction activities. The potential impacts of the proposed modification would be consistent with those described in section 6.2.3 of the project REF and would include potential for erosion of exposed surfaces. There would be no long-term impact on soils and geology as a result of the proposed modification with sites restored and stabilised as required. Safeguards SO-1 to SO-9 are adequate to address potential impacts. No additional measures are proposed.
Hydrology, hydraulics and water quality	Hydrology, hydraulics and water quality relevant to the proposed modification is consistent with that described in section 6.3.2 of the project REF.	The proposed shared path, truck arrestor bed and utility adjustments would have negligible incremental impact on hydrology, hydraulics and water quality. Flood modelling has been carried to confirm impacts. The relocated detention basin Ingleside Road and drainage works on Boundary Street have been proposed as part of the optimisation of the drainage design. The new detention basin location would be easier to access for maintenance. No changes to the drainage catchment on Boundary Street are proposed and therefore no additional impacts in this area are expected. Safeguards WQ-1 to WQ-6 are adequate to address potential impacts. No additional measures are proposed.

Environmental factor	Existing environment	Potential impacts
Traffic and transport	The existing traffic and transport environment relevant to the proposed modification is consistent with that described in section 6.4.2 of the project REF.	The proposed modification would result in some minor and short-term delays during construction on Lane Cove Road and Ingleside Road (with the shared path and basin construction respectively). There is negligible existing use of the northern end of Boundary Street and therefore impacts at that location are not expected. The proposed shared path would enhance sense of place for pedestrian / cyclists and improve safety and local connectivity. Safeguards TT-1 to TT-4 are adequate to address potential impacts. No additional measures are proposed.
Historic heritage	The existing non-Aboriginal heritage environment relevant to the proposed modification is consistent with that described in section 6.6.2 of the project REF.	The proposed modification is not expected to affect non-Aboriginal heritage items or areas of archaeological potential. Safeguards HH-1 to HH-3 are adequate to address potential impacts. No additional measures are proposed.
Noise and vibration	The existing noise environment relevant to the proposed modification is consistent with that described in section 6.8.3 of the project REF. The proposed modification would occur in or adjacent to noise catchment areas (NCAs) 1, 2, 4, 6 and 7 as identified in Figure 6-15 and as described in Table 6-33 in the project REF.	The potential impacts of the proposed modification would be consistent with those described in section 6.8.4 (including Table 6-48) of the project REF. The project REF identified that noise levels would likely exceed the noise management levels during standard hours and outside of standard hours under worst-case conditions in all NCAs. The construction of the would occur during standard construction hours and would only affect individual receivers for short periods as works progress along the shared path alignment. The proposed drainage works would also occur during standard construction hours and are not expected to alter the noise predictions in the project REF for NCA7 and NCA8. There is likely to be some additional noise for the single residence on the northern part of Boundary Street when drainage works are occurring at the closest point.

Environmental factor	Existing environment	Potential impacts
		Utility adjustments would occur at night to minimise impacts on traffic. These impacts would be limited to less than one week. Safeguards NV-1 to NV-10 are adequate to address potential impacts. No additional measures are proposed.
Air quality	The existing air quality environment relevant to the proposed modification is consistent with that described in section 6.9.2 of the project REF.	The potential impacts of the proposed modification would be consistent with those described in section 6.9.3 of the project REF and would include minor emissions from machinery (e.g. delivery vehicles, construction plant) and dust. Safeguards AQ-1 to AQ-2 are adequate to address potential impacts. No additional measures are proposed.
Climate change and greenhouse gases	Refer to Section 6.10.1 and Section 6.10.2 of the project REF.	No changes to the potential impacts described in the project REF are expected as a result of the proposed modification.
Socio-economic	The existing socio-economic environment relevant to the proposed modification is consistent with that described in section 6.11.2 of the project REF.	The potential impacts of the proposed modification would be consistent with those described in section 6.11.3 of the project REF. There would be no additional property impacts or additional impacts on social infrastructure. The proposed shared path would deliver socio-economic benefits through improved pedestrian / cyclist connectivity, safety, and amenity. It is expected that the shared zone on Walana Crescent and Wallaby Circuit would be used primarily by residents north of Mona Vale Road and west of Samuel Street, and anyone wishing to access Lane Cove Road through the bushland. Commuter cyclists and cycle groups are more likely to use the new wide shoulders along Mona Vale Road between Manor Road and Daydream Street. This is consistent with observations along other sections of Mona Vale Road where wide shoulders have been provided. Safeguards SE-1 to SE-7 are adequate to address potential impacts. No additional measures are proposed.

Environmental factor	Existing environment	Potential impacts
Hazards and risks	Refer to Section 6.12.1 of the project REF.	Hazards and risks would be consistent with those identified in Section 6.12.2 of the project REF. Safeguards HR-1 to HR-3 are adequate to address potential impacts. No additional measures are proposed.
Waste management and resource use	Refer to Section 6.13 of the project REF.	The potential impacts of the proposed modification would be consistent with those described in section 6.13.1 of the project REF. Additional waste quantities would be small in the context of the project and no additional waste streams have been identified.

6.4.2 Safeguards and management measures

Existing safeguards are considered adequate to address the impacts identified in Table 6-4. No addition measures are proposed.

6.5 Cumulative impacts

6.5.1 Potential impacts

Cumulative impacts would be considered minimal.

While there would be some vegetation clearing required for the shared path and stormwater detention basin, significant impacts on threatened species populations and/or ecological communities are not expected.

Cumulative impacts associated with the interaction of additional project related construction traffic attributable to the proposed modification with construction traffic from other projects that might be in progress concurrently are not expected. Cumulative traffic related impacts would be expected to remain unchanged from those documented in the approved project REF.

Minimising impacts of the proposed modification is the best way to address any potential cumulative effects. Various measures have been proposed as part of the approved project to address impacts and additional measures have been identified in this addendum REF to address biodiversity impacts.

6.5.2 Safeguards and management measures

Existing safeguard CU-1 is considered adequate to address cumulative impacts. No additional measures are proposed.

7 Environmental management

7.1 Environmental management plans (or system)

A number of safeguards and management measures have been identified to minimise adverse environmental impacts, including social impacts, which could potentially arise as a result of the proposed modification. Should the proposed modification proceed, these management measures would be addressed if required during detailed design and incorporated into the Project Environmental Management Plan (PEMP) and Contractors Environmental Management Plan (CEMP) and applied during the construction and operation of the proposed modification.

7.2 Summary of safeguards and management measures

Environmental safeguards and management measures for the [insert the name of the overall project are summarised in Table 7-1. Additional safeguards and management measures identified in this addendum REF are included in bold and italicised font. The safeguards and management measures will be incorporated into the detailed design phase of the proposed modification, the CEMP and the PEMP and implemented during construction and operation of the proposed modification, should it proceed. These safeguards and management measures will minimise any potential adverse impacts arising from the proposed works on the surrounding environment.

Table 7-1: Summary of safeguards and management measures

No.	Impacts	Environmental safeguards	Responsibility	Timing
1	General	All environmental safeguards must be incorporated within the following: • Project Environmental Management Plan • Detailed design • Contract specifications for the proposal • Contractor's Environmental Management Plan	Roads and Maritime Project manager	Pre-construction
2	General	• A risk assessment must be carried out on the proposal in accordance with the Roads and Maritime Project Pack and PMS risk assessment procedures to determine an audit and inspection program for the work. The recommendations of the risk assessment are to be implemented. • A review of the risk assessment must be undertaken after the initial audit or inspection to evaluate is the level of risk chosen for the project is appropriate. • Any work resulting from the proposal and as covered by the REF may be subject to environmental audit(s) and/or inspection(s) at any time during their duration.	Project manager and regional environmental staff	Pre-construction After first audit
3	General	The environmental contract specification G36 – Environmental Protection (Management System) must be forwarded to the Roads and Maritime Senior Environmental Officer for review at least 10 working days prior to the tender stage. A contractual hold point must be maintained until the CEMP is reviewed by the Roads and Maritime Senior Environmental Officer.	Roads and Maritime Project manager	Pre-construction

No.	Impacts	Environmental safeguards	Responsibility	Timing
4	General	The Roads and Maritime Project Manager must notify the Roads and Maritime Environment Officer (Sydney Region) at least five days prior to work commencing.	Roads and Maritime Project manager	Pre-construction
5	General	All businesses and residences likely to be affected by the proposed work must be notified at least five working days prior to the commencement of the proposed activities.	Construction contractor	Pre-construction
6	General	Environmental awareness training must be provided, by the contractor, to all field personnel and subcontractors.	Construction contractor	Pre-construction and during construction as required.
B1	Impact to biodiversity	A Biodiversity Management Plan (BMP) is to be prepared and included in within the CEMP. The BMP is to include (but not be limited to) the following: • a site walk with appropriate site personnel including RMS representatives to confirm clearing boundaries and sensitive location prior to commencement of work • identification (marking) of the clearing boundary and identification (marking) of habitat features to be protected. Eg. use of flagging tape • a map which clearly shows vegetation clearing boundaries and sensitive areas/no go zones • incorporation of management measures identified as a result of the pre-clearing survey report, completed by an ecologist, (G40, section 2.4) and nomination of actions to respond to the recommendations made. This should include details of the measures to be implemented to protect clearing limits and no go areas • a detailed clearing process in accordance with RMS Biodiversity Guidelines (2011) including requirements of Guide 1, 2, 4 & 9. • identify toolbox talks where biodiversity would be included such as vegetation clearing or work adjacent to sensitive locations • identify control/mitigation measures to prevent impacts on sensitive locations or no go zones	Construction contractor	Pre-construction

No.	Impacts	Environmental safeguards	Responsibility	Timing
		• a stop work procedure in the event of identification of unidentified species, habitats or populations • a nest box strategy would be developed by an ecologist, in consultation with Roads and Maritime Biodiversity specialists, to compensate for the loss of tree hollows. The number and size of tree hollows to be removed would be assessed prior to clearing, with at least 70% of nest boxes installed at least one month before clearing commences, in accordance with Roads and Maritime Services Biodiversity Guidelines		
B2	Removal or modification of native vegetation	On-site measures; clearing limits will be enforced and cordoned off and signposted	Construction contractor	Pre-clearing and construction
B3	Removal of individuals of threatened species	Pre-clearing surveys for fauna will be undertaken in accordance with the Roads and Maritime Services Biodiversity Guidelines	Construction contractor	Pre-clearing
B4	Predation by domestic and/or feral animals	Fauna connectivity structures and approaches to be designed to provide protective features and/or refuges to reduce potential for predation of fauna using the structure	Design contractor	Detailed design
B5	Loss of native vegetation and fauna habitats adjacent to approved construction zone	Clearing limits will be accurately demarcated with assistance from a surveyor, and exclusion zones will be implemented beyond the demarcated area. A suitably qualified ecologist or experienced wildlife carer will be engaged to survey and handle any fauna.	Construction contractor	Pre-clearing and construction
B6	Increase in fauna fatality and injury	Pre-clearance procedures would be implemented during construction to prevent direct fauna mortality. Fauna fencing would be installed at strategic locations to reduce potential for fauna to access the road during operation, thereby reducing potential for roadkill. Should any termite mounds be encountered and require removal within the construction footprint, they would be checked for the presence of Rosenberg's goanna eggs prior to clearing. Salvage of	Construction contractor	Detailed design and construction

No.	Impacts	Environmental safeguards	Responsibility	Timing
		any eggs would be undertaken by appropriately experienced personnel.		
B7	Loss of habitat connectivity	A connectivity plan would be prepared by a suitably qualified and experienced ecologist during the detailed design. The plan would be developed in consultation with RMS Biodiversity specialists and would include: • identification of connectivity objectives for the determined project • identification of target species for all measures • Consideration of the specific connectivity requirements for each identified target species An ecologist would be engaged on site to supervise the construction of temporary and permanent fauna mitigation measures, including, but not limited to, connectivity structures and fauna fencing. Post-construction monitoring in an adaptive management framework would be undertaken to determine the effectiveness of connectivity structures, which would be actively managed to facilitate movement of fauna species, particularly the Eastern Pygmy-possum. A monitoring plan would be developed by a suitably qualified and experienced ecologist in consultation with Roads and Maritime Services' biodiversity specialists and Northern Beaches Council, and would include: • identification of monitoring objectives • identification of species to be monitored and suitable monitoring methods to be implemented to detect usage of connectivity structures by those species • a monitoring program for a period of up to five years following opening of the project	Construction contractor	Detailed design and construction
B8	Hydrological changes	Robust erosion and sediment control measures would be incorporated into the CEMP to prevent adverse impacts to Angus' onion orchid and threatened frog habitat from changes to run off.	Construction contractor	Pre-clearing and construction

No.	Impacts	Environmental safeguards	Responsibility	Timing
B9	Weed invasion	Declared noxious weeds are to be managed according to the requirements under the Noxious Weeds Act 1993 and Guide 6 (Weed Management) of the RTA Biodiversity Guidelines 2011.	Construction contractor	Construction
B10	Spread of disease	Construction plant will be required to be certified clean, and a hygiene protocol will be implemented to ensure the proposed modification does not result in increased risk of spreading the chytrid fungus.	Construction contractor	Construction
B11	Potential impact on threatened fauna	Targeted fauna fencing at strategic locations along the road to funnel toward underpasses connectivity structures. Fauna connectivity structures will consist of one dedicated fauna underpass and one fauna overpass. In areas that could contain the eastern pygmy-possum (woodland and sandstone heath) vegetation clearing would be undertaken as far as possible outside of the main breeding season (December – July). All vegetation clearing would be supervised by an appropriately qualified and experienced ecologist to ensure potential for harm to eastern pygmy-possums and other fauna is minimised. Vegetation would be planted to encourage crossing and reduce risk of predation. Species planted would be in accordance with the Mona Vale Road Upgrade East 100% Detail Landscape Design Report and Landscape Plans. Vegetation would be subject to ongoing maintenance by appropriately qualified bush regeneration contractors, to ensure it establishes to provide suitable habitat for the eastern pygmy-possum and other threatened fauna. Installation and monitoring of nest boxes for up to five years, in accordance with a monitoring plan to be prepared in consultation with Roads and Maritime Services biodiversity specialists and Northern Beaches Council.	Construction contractor	Pre-construction and construction
B12	Loss of native vegetation	Design of the shared path will avoid removal of vegetation along Lane Cove Road where reasonable and feasible. If vegetation removal cannot be avoided, the footprint will be minimised, and the retention of large canopy trees will be prioritised.	Contractor	Construction

No.	Impacts	Environmental safeguards	Responsibility	Timing
B13	Direct impacts on Angus's Onion Orchid	Removal of Angus's Onion Orchid (Microtis angusii) along Lane Cove Road and Ingleside Road will be avoided where reasonable and feasible. If Angus's Onion Orchid individuals are impacted by the proposed modification, offsets will be provided in accordance with the Guideline for Biodiversity Offsets (Roads and Maritime Services, 2016).	Transport for NSW	Construction
B14	Impacts to Eastern Pygmy-possum, Red-crowned toadlet, and Glossy Black-Cockatoo habitat	The shared path will avoid impacts on potential Eastern Pygmy-possum, Red-crowned toadlet, and Glossy Black-Cockatoo habitat within the Katandra Bushland Sanctuary and will avoid the identified artificial dam between Walana Crescent and Lane Cove Road.	Transport for NSW	Construction
B15	Impacts to Red-crowned toadlet habitat	The extension of stormwater line and relocation of the stormwater detention basin along Ingleside Road will avoid and/or minimise impacts on Red-crown toadlet habitat and existing water flow through the current stormwater runoff pathways.	Transport for NSW	Construction
SO-1	Erosion and sedimentation	A Soil and Water Management Plan (SWMP) would be prepared as part of the CEMP prior to the commencement of construction. The SWMP would address the following: • the Roads and Maritime Code of Practice for Water Management. • the Blue Book - Managing Urban Stormwater: Soils and Construction, Volume 1 and 2. • Roads and Maritime Technical Guidelines – Temporary Stormwater Drainage for Road Construction. The SWMP would include: • stockpile management plan • identification of catchment and sub-catchment area high risk areas and sensitive areas. • sizing of each of the above areas and catchment. • the likely run-off from each road sub-catchment. • direction of flow of on-site and off-site water. • separation of on-site and off-site water.	Construction contractor	Pre-construction

No.	Impacts	Environmental safeguards	Responsibility	Timing
		• stockpiles will be designed, established, operated and decommissioned in accordance with the RTA Stockpile Site Management Guideline. • direction of run-off and drainage points during each stage of construction. • dewatering plan which includes process for monitoring flocculating and dewatering water from site (i.e. any sediment basins and sumps). • progressive site-specific Erosion and Sedimentation Control Plans (ESCPs). The ESCP is to be updated at least fortnightly. • a process to routinely monitor the Bureau of Meteorology weather forecasts. • preparation of a wet weather (rain event) plan which includes a process for monitoring • potential wet weather and identification of controls to be implemented in the event of wet weather. • an inspection and maintenance schedule for ongoing maintenance of temporary and permanent erosion and sedimentation controls.		
SO-2	Erosion and sedimentation	A Principal Erosion and Sedimentation Control Plan would be prepared during detailed design. The Principal Erosion and Sedimentation Control Plan would include: • identify site catchment and sub-catchments, high risk areas and sensitive areas • sizing of each of the above areas and catchments • proposed staging plans for the project to ensure appropriate erosion and sediment controls measures are possible • the likely volume of run-off from each catchment and subcatchment in accordance with the Managing Urban Stormwater: Soils and Construction, Volume 1 and 2 (Landcom, 2004). • direction of water flow, both off and on site	Roads and Maritime	Detailed design

No.	Impacts	Environmental safeguards	Responsibility	Timing
		• diversion of off-site water around or through the site or details of separation of on-site and off-site water • the direction of runoff and drainage points during each stage of construction. • the locations and sizing of sediment basins / sumps as well as associated drainage to direct site water to the basin or sumps. • a mapped plan identifying the above at all major construction stages • a review process by a soil conservationist and a process for updating the report to address any recommendations.		
SO-3	Erosion and sedimentation	A soil conservationist from the Roads and Maritime Erosion, Sedimentation and Soil Conservation Consultancy Services Register is to be engaged to review the proposed erosion and sedimentation controls and conduct routine inspections of the construction work.	Construction contractor	Construction
SO-4	Erosion and sedimentation	All stockpiles would be designed, established, operated and decommissioned in accordance with the Roads and Maritime Stockpile Management Procedures.	Construction contractor	Construction
SO-5	Erosion and sedimentation	Controls would be implemented at construction zone exit points to minimise the tracking of soil and particulates onto road surface surfaces.	Construction contractor	Construction
SO-6	Disturbance of contaminated land	Prior to the start of construction, additional environmental investigations will be undertaken to assess the current status of the TPH impacted soils at the truck incident site and assess if recent lane adjustment work have affected this location. Additional testing would be carried out to assess if contaminated soils have been removed or if migration of impacted areas has occurred, impacting previously unaffected areas.	Construction contractor	Pre-construction
SO-7	Disturbance of contaminated land	A Contaminated Land Management Plan will be prepared for the determined project and will include procedures to: • identify potentially contaminated land through monitoring:	Construction contractor	Pre-construction

No.	Impacts	Environmental safeguards	Responsibility	Timing
		- for discolouration or staining of soil - bare soil patches both on-site, and off-site adjacent to site boundary - visible signs of plant stress - presence of drums or other waste material - presence of stockpiles or fill material - odours • undertake further contamination assessment where necessary and advise on the need • for remediation or other action. This includes further investigation of the truck roll over area and any unexpected contamination finds. • divert surface runoff away from the contaminated land. • manage any surface runoff contaminated by exposure to the contaminated land. • assess any requirement to notify relevant Authorities, including the EPA. • manage any remediation and subsequent validation, including any certification required. • review and update the plan. The Contaminated Land Management Plan will contain the following: • contaminated land legislation and guidelines including any relevant licences and approvals to be obtained. • identification of locations of known or potential contamination and preparation of a map showing these locations. • identification of rehabilitation requirements, classification, transport and disposal requirements of any contaminated land within the construction footprint.		

No.	Impacts	Environmental safeguards	Responsibility	Timing
		• contamination management measures including waste classification and reuse procedures and unexpected finds procedures • measures to identify and appropriately manage any residual asbestos containing material located on the 1-7 Walana Crescent ancillary site.		
SO-8	Disturbance of asbestos containing materials	A classification system will be used to control the excavation, stockpiling and disposal of all potentially contaminated materials. Soils should be classified (where possible) in-situ prior to excavation or when stockpiled during excavation, depending on available time and room for stockpile areas. The same procedures will be followed for any unexpected finds.	Construction contractor	Construction
SO-9	Disturbance of Asbestos containing materials	An Asbestos Management Plan will be prepared and implemented. Work in any area where asbestos is newly identified will cease immediately. An investigation will be undertaken and report prepared to determine the nature, extent and degree of the asbestos contamination. The level of reporting will be in accordance with Guidelines for Consultants Reporting on Contaminated Sites (Office of Environment and Heritage, 2011), any relevant WorkCover Guidelines and will include the proposed methodology for the remediation of the asbestos contamination. Remediation activities will not take place until receipt of the investigation report by occupational health professional. Work will 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.	Construction contractor	Pre-construction
WQ-1	Concrete and other materials from construction vehicles entering waterways	Vehicle wash down will occur in a location that is bunded.	Construction contractor	Construction

No.	Impacts	Environmental safeguards	Responsibility	Timing
WQ-2	Spills during construction	All fuels, chemicals and liquids will be stored in an impervious bunded area and at least 50 metres from creek and other waterways and slopes with a gradient above 10 per cent.		Construction
WQ-3	Spills during construction	Refuelling of plant and equipment will occur either off-site or on relatively level ground at least 50 metres from waterways, drainage lines and sensitive areas. The refuelling machinery will have spill management equipment and there will be a person attending during the refuelling process.	Construction contractor	Construction
WQ-4	Spills during construction	A Spill Management Plan would be prepared for the proposal. If a spill or incident occurs, the Roads and Maritime Environmental Incident Classification and Management Procedure (Roads and Maritime Services, 2014) will be followed and the Roads and Maritime Contract Manager notified immediately.	Construction contractor Roads and Maritime	Construction
WQ-5	Pollution from the road during operation	Consideration will be given to planting the level spreaders with suitable species to provide nominal water quality treatment prior to discharge.	Design contractor	Detailed design
WQ-6	Spills during operation	Opportunities to improve the management of spills (such as spill basins and/or suitable block / bund locations) for the truck arrester bed and Ponderosa Parade will be investigated during detailed design.	Design contractor Roads and Maritime	Detailed design
TT-1	Construction traffic impacts	A traffic management plan (TMP) will be prepared prior to construction and would be included in the CEMP. The TMP would: • identify the traffic management requirements during construction • describe the general approach and procedures to be adopted when producing specific traffic control plans • determine temporary speed restrictions to ensure safe driving environment around work zones • provide for access to local roads and properties, including the use of temporary turnaround bays where appropriate • include methods for implementing the traffic management plan and minimising road user delays • provide for appropriate warning and advisory signposting	Construction contractor	Pre-construction

No.	Impacts	Environmental safeguards	Responsibility	Timing
		• consider other developments in the wider area that may also be under construction, to minimise traffic conflict and congestion that may occur due to the cumulative increase in construction vehicle traffic • develop plans for the access to ancillary facilities and site compounds including any speed restrictions for vehicles around the sites • ancillary facilities and site compounds would not be accessed by heavy vehicles using local roads.		
TT-2	Construction traffic impacts	Consultation on construction activities will occur with emergency service authorities including NSW Rural Fire Service and NSW Fire and Rescue	Roads and Maritime	Detailed design
TT-3	Construction traffic impacts	A detailed construction staging plan will be developed to maintain existing peak flow capacity	Construction contractor	Pre-construction
TT-4	Access to bus services	Access to appropriate bus stop locations will be maintained during construction in consultation with bus operators. Any changes will be appropriately communicated to bus users.	Construction contractor	Pre-construction
TT-5	Access to bus services	Surrounding residents and sensitive receivers are to be notified of access provisions for ancillary facilities and site compounds, times of operation and the expected duration of the construction period.	Construction contractor	Pre-construction
HH-1	Impacts on known heritage values	Potential impacts of construction vibration on the Mona Vale Cemetery and the gateposts will be investigated prior to the commencement of construction. Construction methods will be selected and safeguards will be prescribed (including vibration monitoring) to ensure there are no impacts on these items.	Construction contractor	Construction
HH-2	Impacts on known heritage values	The location and heritage significance of the Mona Vale Road Cemetery and gateposts and the potential presence of the well at Lot 26 DP 654262 will be discussed with staff during site inductions and tool box talks.	Construction contractor	Construction

No.	Impacts	Environmental safeguards	Responsibility	Timing
HH-3	Unexpected finds	The Standard Management Procedure: Unexpected Archaeological Finds Procedure (Roads and Maritime Services, 2012) is to be followed in the event of uncovering a potential historic heritage item not considered by REF.	Construction contractor	Construction
NV-1	Construction noise	Construction noise would be managed by a detailed Construction Noise and Vibration Management Plan (CNVMP) prepared prior to commencement of work. The management plan would consider the following as a minimum: • identify nearby residences and other sensitive land uses • develop noise management levels consistent with the ICNG • assess the potential impact from the proposed construction methods • assess the potential impact from any proposed construction ancillary facilities or site • compound specific to the construction activities, timeframes and durations that are proposed • where management levels are exceeded examine feasible and reasonable noise mitigation • develop reactive and proactive strategies for dealing with any noise complaints • identify a site contact person to follow up complaints noise monitoring.	Construction contractor	Pre-construction
NV-2	Operational noise	During the detailed design stage of the proposal, further investigations of all feasible and reasonable mitigation options would be undertaken for affected receivers in accordance with the Road Noise Policy (DECCW 2011) and Roads and Maritime's Environmental Noise Management Manual Practice Note 4 (RTA 2001).	Construction contractor	Pre-construction
NV-3	Construction noise	Consider construction compound layout so that primary noise sources are at a maximum distance from sensitive receivers (primarily residential receivers), with solid structures (sheds and	Construction contractor	Construction

No.	Impacts	Environmental safeguards	Responsibility	Timing
		containers) placed between sensitive receivers and noise sources (and as close to the noise sources as is practical)		
NV-4	Construction noise	Vehicle delivery times will be scheduled where feasible to the recommended construction hours to minimise noise impacts from heavy vehicle movements and deliveries.	Construction contractor	Construction
NV-5	Construction noise	Any out of hours work would comply with G36 community notification requirements and the mitigation measures specified within the Roads and Maritime's Noise Management Manual – Practice Note VII.	Construction contractor	Construction
NV-6	Construction noise	The environmental induction program will include specific noise and vibration issues awareness training including, but not limited to, the following: • avoiding use of radios during work outside normal hours • avoiding shouting and slamming doors • where practical, operating machines at low speed or power and switching off when not being used rather than left idling for prolonged periods minimising reversing • avoiding dropping materials from height and avoiding metal to metal contact on material.	Construction contractor	Construction
NV-7	Construction noise	Building condition surveys will be undertaken for buildings within identified in the CNVMP. A copy of the report will be sent to the landholder.	Construction contractor	Pre-construction
NV-8	Construction noise	In the case that exceedances are detected for noise and vibration monitoring, the situation would be reviewed in order to identify means to minimise impacts to residents and the appropriate changes made and the CNVMP updated accordingly.	Construction contractor	Construction
NV-9	Operational noise	A post-construction noise monitoring program (including simultaneous traffic counts) will be undertaken in accordance with the Roads and Maritime's Environmental Noise Management Manual within 6 to 12 months of opening once traffic flows have	Roads and Maritime	Post-construction

No.	Impacts	Environmental safeguards	Responsibility	Timing
		stabilised in order to verify the noise assessment. This will include monitoring of maximum noise events (Lmax).		
NV-10	Operational noise	For all at-house treatment locations, a site inspection should be undertaken to assess the type and extent of at-house treatment. The inspection should consider the building construction and other aspects identified in the Roads and Maritime Noise Management Guidelines.	Roads and Maritime	Pre-construction
VA-1	Landscape character and visual impacts	Detailed design of the determined project will incorporate the design vision, objectives and mitigation measures outlined in the Landscape Character, Visual Impact Assessment and Urban Design Report where feasible. This will include consideration of screen plantings, feature plantings and design refinements for each of assessed viewpoints.	Roads and Maritime Design Contractor	Detailed design
VA-2	Landscape character and visual impacts	An urban design contractor from the Roads and Maritime panel will be engaged for the detailed design phase to ensure adequate consideration of urban design principles and objectives, and to ensure appropriate mitigation of identified impacts.	Roads and Maritime Design Contractor	Detailed design
VA-3	Landscape character and visual impacts	The footprint for construction work will be kept to a minimum to ensure existing stands of vegetation remain intact wherever possible and to screen adjoining sensitive receivers.	Construction contractor	Construction
VA-4	Construction related visual impacts	The work site will be maintained so as to minimise contractor construction related visual clutter.	Construction contractor	Construction
AQ-1	Dust and emissions	An Air Quality Management plan (AQMP) would be prepared as part of the CEMP. The plan would include but not be limited to: • a map identifying locations of sensitive receivers Identification of potential risks / impacts due to the work / activities as dust generation activities • management measures to minimise risk including a progressive stabilisation plan • a process for monitoring dust on site and weather conditions • a process for altering management measures as required.	Construction contractor	Pre-construction

No.	Impacts	Environmental safeguards	Responsibility	Timing
AQ-2	Dust and emissions	The management measures within the AQMP would include but not limited to the following: • vehicles transporting waste or other materials that have a potential to produce odours or dust are to be covered during transportation • dust will be suppressed on stockpiles and unsealed or exposed areas using methods such as water trucks, temporary stabilisation methods, soil binders or other appropriate practices • disturbed areas will be minimised in extent and rehabilitated progressively • speed limits will be imposed on unsealed surfaces • stockpiles will be located as far away from residences and other sensitive receivers as possible • work (including the spraying of paint and other materials) will not be carried out during • strong winds or in weather conditions where high levels of dust or air borne particulates are likely • plant, vehicles and equipment will be maintained in good condition and in accordance with manufacturer's specifications • plant and machinery will be turned off when not in use • no burning of any timbers or other combustible materials will occur onsite • visual monitoring of air quality will be undertaken to verify the effectiveness of controls and enable early intervention • work activities will be reprogrammed if the management measures are not adequately restricting dust generation.	Construction contractor	Pre-construction
SE-1	Property acquisition	All property valuations and acquisitions will be carried out in accordance with the Roads and Maritime Services Land Acquisition Information Guide (Roads and Maritime Services, 2014b) and the Land Acquisition (Just Terms Compensation) Act 1991.	Roads and Maritime	Detailed design

No.	Impacts	Environmental safeguards	Responsibility	Timing
SE-2	Property acquisition	A complaint handling procedure and register will be included in the CEMP.		
SE-3	Construction related disruption	Affected people will be notified of all aspects of the project prior to commencement of construction. This will include notification of time and duration of the project provision of a contact name and number.	Roads and Maritime	Detailed design
SE-4	Construction related disruption	Affected people will be notified of all aspects of the project prior to commencement of construction. This will include notification of time and duration of the project provision of a contact name and number.	Construction contractor	Pre-construction
SE-5	Construction related disruption	Potentially affected residents and businesses will be notified of the progress of the work and advised in advance (e.g. by letterbox drop, meetings with individuals, etc) of any anticipated changes in noise emissions prior to critical stages of the work, and to explain complaint procedures and response mechanisms.	Construction contractor	Construction
SE-6	Construction related disruption	Access to residences and business will be maintained during construction. Where temporary changes to access arrangements are necessary, the contractor will advise owners and tenants and consult with them in advance with regard to alternative access arrangements.	Construction contractor	Construction
SE-7	Relocation costs	Roads and Maritime will cover the costs of relocating specific items on the Pittwater RSL Club site, in consultation with club management.	Roads and Maritime	Construction
HR-1	Construction hazards and risks	Emergency response plans will be incorporated into the CEMP. This will include a bushfire risk and response plan.	Construction contractor	Construction
HR-2	Debris build up on road shoulder during operation	Roads and Maritime maintenance contractors will be required to maintain the road including the road shoulders.	Roads and Maritime	Operation
HR-3	Bushfire hazard during operation	Planning for Bush Fire Protection (NSW Rural Fire Service, 2006) will be considered in finalising the landscape plan for the proposal.	Roads and Maritime	Detailed design
AH-1	Damage to known Aboriginal sites	Fencing and signage will be used to establish exclusion areas around nearby Aboriginal sites.	Construction contractor	Pre-construction

No.	Impacts	Environmental safeguards	Responsibility	Timing
AH-2	Damage to known Aboriginal sites	During site inductions and toolbox talks, all site staff will be made aware of the location of known Aboriginal sites and associated responsibilities under the National Parks and Wildlife Act 1974.	Construction contractor	Construction
AH-3	Damage to known Aboriginal sites	Potential impacts of construction vibration on nearby Aboriginal sites will be investigated prior to the commencement of construction. Construction methods would be selected and safeguards would be prescribed. Monitoring would occur where necessary.	Construction contractor	Pre-construction and construction
AH-4	Unexpected impacts on Aboriginal heritage	The Standard Management Procedure: Unexpected Archaeological Finds Procedure (Roads and Maritime Services, 2012) will be followed in the event of uncovering a potential Aboriginal heritage item.	Construction contractor Roads and Maritime	Construction
AH-5	Impacts on known Aboriginal sites	Further archaeological investigation will be carried out to confirm the location of unregistered Aboriginal site DMR5. This site will be protected during construction.	Transport for NSW Contractor	Construction
GG-1	Greenhouse gas emissions	The use of alternative fuels and power sources for construction plant and equipment will be investigated and implemented, where appropriate.	Construction contractor	Construction
GG-2	Greenhouse gas emissions	The energy efficiency and related carbon emissions will be considered in the selection of vehicle and plant equipment.	Construction contractor	Construction
GG-3	Greenhouse gas emissions	Materials will be delivered as full loads and local suppliers would be used where possible to reduce construction transport emissions	Construction contractor	Construction
GG-4	Greenhouse gas emissions	Equipment will be properly maintained to ensure they are operating efficiently.	Construction contractor	Construction
WR-1	Construction waste management	The following resource management hierarchy principles will be followed: • avoid unnecessary resource consumption as a priority • avoidance will be followed by resource recovery (including reuse of materials, reprocessing, and recycling and energy recovery).	Construction contractor	Construction

No.	Impacts	Environmental safeguards	Responsibility	Timing
		Disposal will be undertaken as a last resort (in accordance with the Waste Avoidance and Resource Recovery Act 2001).		
WR-2	Construction waste management	A Resource and Waste Management Plan (RWMP) would be prepared, which will include the following (as a minimum): • the type, classification and volume of all materials to be generated and used onsite including identification of recyclable and non-recyclable waste in accordance with the EPA's Waste Classification Guides 2014 • quantity and classification of excavated material generated as a result of the determined project (Refer to Roads and Maritime's Waste Management Fact sheets 1-6, 2012) interface strategies for cut and fill on site to ensure re-use where possible • strategies to 'avoid', 'reduce', 'reuse' and 'recycle' materials • classification and disposal strategies for each type of material • destinations for each resource/ waste type either for onsite reuse or recycling, offsite reuse or recycling, or disposal at a licensed waste facility • details of how material would be stored and treated onsite • identification of available recycling facilities on and offsite • identification of suitable methods and routes to transport waste • procedures and disposal arrangements for unsuitable excavated material or contaminated material • site clean-up for each construction stage.	Construction contractor	Construction
WR-3	Construction waste management	Housekeeping at construction sites will be addressed regularly. This will include collection and sorting of recycling, general waste and green waste. Waste will be disposed regularly at a licensed waste facility or recycling where available.	Construction contractor	Construction
WR-4	Design waste management	Prepare and implement a design resource plan. As a minimum, the plan is to include the following information: • outline the quantities and type of material that will be produced by the project	Detailed design contractor	Detailed design

No.	Impacts	Environmental safeguards	Responsibility	Timing
		• outline the quantities and type of material that can be used during the detailed design • steps taken during detailed design to minimise the generation of materials such as excavated material • how the design maximises the on-site re-use of any excavated materials • how the design maximises the opportunities for the use of recycled materials (ensuring that the materials are fit for purpose and meet engineering performance standards) • detail the quantities and type that cannot be re-used onsite.		
WR-5	Construction waste management	Procurement will endeavour to use materials and products with a recycled content where that material or product is cost and performance effective.	Construction contractor	Construction
WR-6	Construction waste management	Excavated material will be reused onsite for fill where feasible to reduce demand on resources.	Construction contractor	Construction
CU-1	Cumulative impacts	The CEMP will be revised to consider potential cumulative impacts from surrounding development activities as they become known.	Construction contractor	Pre-construction and construction

7.3 Licensing and approvals

All relevant licenses, permits, notifications and approvals needed for the [project and when they need to be obtained are listed in Table 7-2. Additional or changed licenses and approval requirements identified in this addendum REF are indicated by underlined and/or struck out font.

Table 7-2: Summary of licencing and approvals required

Instrument	Requirement	Timing
Section 138 of the *Roads Act 1993*	An applicable road occupancy licence would be required. A road occupancy licence allows the proponent to use a specified road space at approved times, provided certain conditions are met. The licence applies to the occupation of the "road space" only and does not imply permission or approval for the actual (physical) work being undertaken.	An applicable road occupancy licence would need to be in place prior to the commencement of construction.
Section 91B and 91F of the *Water Management Act 2000*	If groundwater extraction is required, a water supply work approval and aquifer interference approval (subject to commencement of provisions) would be required for the work.	Prior to construction commencement or during construction as required.
Section 48 of the Protection of the Environment Operations Act 1997	The determined project would be a scheduled activity under the Protection of the Environment Operations Act 1997. An environment protection licence (EPL) would be required under Section 48 of this act to authorise the carrying out of scheduled development.	An EPL would be required prior to undertaking the scheduled work. Each period of 12 months (commencing from the issue of a licence) is a licence fee period for a licence. The administrative fee for any licence fee period of a licence must be paid not later than 60 days after the beginning of that licence fee period.[1]

[1] The project is subject to Environment Protection Licence 21037 issued to Georgiou Group Pty Ltd.

8 Conclusion

8.1 Justification

The proposed modification reflects further design development of the proposal and respond to opportunities that have arisen since the determination of the project REF. Specifically, the proposed modification:

- Addresses an opportunity to provide a shared path connection along Lane Cove Road following further consultation with Northern Beaches Council
- Addresses an opportunity (enabled by the redesign of the shared path connection between Mona Vale Road and Lane Cove Road) to improve safety by extending the length of the truck arrestor bed
- Improves safety through the provision of a guardrail along a bend on Lane Cove Road
- Optimises the drainage design for the project and reduces flooding impacts on private property
- Captured additional utility adjustment requirements.

While there would be some environmental impacts as a consequence of the proposed modification including biodiversity and visual impacts, they have been avoided or minimised wherever possible through the site specific safeguards summarised in section 7.

The benefits of the proposed modification (improved safety, pedestrian /cyclist connectivity, optimised drainage) are considered to outweigh the mostly temporary adverse impacts and risks associated with the proposed modification.

8.2 Objectives of the EP&A Act

Table 8-1 reviews the consistency of the proposal with the objects of the EP&A Act.

Table 8-1: Objects of the EP&A Act

Environmental factor	Construction
1.3(a) To promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources.	The proposed modification would improve safety and active transport connectivity. Environmental impacts have been minimised.
1.3(b) To facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment.	The principles of ecological sustainable development are considered in Section 8.2.1.
1.3(c) To promote the orderly and economic use and development of land.	The proposed modification is consistent with the plans outlined in Section 2.1 of the project REF and with the Northern Beaches Bike Plan (Northern Beaches Council, 2020).
1.3(d) To promote the delivery and maintenance of affordable housing.	Not relevant to the proposed modification.

Environmental factor	Construction
1.3(e) To protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats.	The proposed modification would have some potential impacts on native animals and plants, ecological communities, and their habitats. Impacts have been assessed as not significant.
1.3(f) To promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage).	Impacts on Aboriginal and non-Aboriginal heritage have been assessed as part of this addendum REF (Section 6.2 and Section 6.4 respectively). Safeguards and mitigation measures have been proposed to address impacts where required.
1.3(g) To promote good design and amenity of the built environment.	The proposed modification contributes to improved amenity of the built environment by enhancing pedestrian / cyclist amenity and connectivity through the provision of a shared path.
1.3(h) To promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants.	Not relevant to the proposed modification.
1.3(i) To promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State.	The proposed modification has been developed with the involvement of various stakeholders including the Northern Beaches Council.
1.3(j) To provide increased opportunity for community participation in environmental planning and assessment.	Consultation carried out to date and proposed ongoing consultation is outlined in Chapter 5.

8.2.1 Ecologically sustainable development

Ecologically sustainable development (ESD) is development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends. The principles of ESD have been an integral consideration throughout the development of the proposal.

ESD requires the effective integration of economic and environmental considerations in decision-making processes. The four main principles supporting the achievement of ESD are discussed below.

The precautionary principle

The precautionary principle deals with certainty in decision-making. It provides that where there is a threat of serious or irreversible environmental damage, the absence of full scientific certainty should not be used as a reason to postpone measures to prevent environmental degradation.

The precautionary principle has guided the assessment of environmental impacts for this assessment and the development of mitigation measures.

8.2.2 Intergeneration equity

Social equity is concerned with the distribution of economic, social and environmental costs and benefits. Inter-generational equity introduces a temporal element with a focus on minimising the distribution of costs to future generations.

The impacts of the proposal have been identified primarily short term and manageable. Benefits to pedestrians and cyclists in terms of improved amenity, safety and connectivity would be realised over the short and longer term.

8.2.3 Conservation of biological diversity and ecological integrity

The twin principles of biodiversity conservation and ecological integrity have been a consideration during the design and assessment process with a view to identifying, avoiding, minimising and mitigating impacts.

The proposed modification is not expected to have significant biodiversity impacts.

8.2.4 Improved valuation, pricing and incentive mechanisms

The principle of internalising environmental costs into decision making requires consideration of all environmental resources which may be affected by a project, including air, water, land and living things.

While it is often difficult to place a reliable monetary value on the residual, environmental and social effects of the proposed modification, the value placed on environmental resources within and around the corridor is evident in the extent of environmental investigations, planning and design of impact mitigation measures to prevent adverse environmental impacts.

8.3 Conclusion

The proposed modification is subject to assessment under Division 5.1 of the EP&A Act. The REF has examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed activity.

This has included consideration (where relevant) of conservation agreements and plans of management under the NPW Act, biodiversity stewardship sites under the BC Act, wilderness areas, areas of outstanding value, impacts on threatened species and ecological communities and their habitats and other protected fauna and native plants. It has also considered potential impacts to matters of national environmental significance listed under the Federal EPBC Act.

A number of potential environmental impacts from the proposal have been avoided or reduced during the concept design development and options assessment (including a decision to avoid the Katandra Bushland Sanctuary). The proposal as described in the REF best meets the project objectives but would still result in some visual, construction noise, traffic and socio-economic impacts. Safeguards and management measures as detailed in this REF would ameliorate or minimise these expected impacts. The proposal would improve safety, improve active transport infrastructure and reduce private property flooding impacts. On balance the proposed modification is considered justified and the following conclusions are made.

8.3.1 Significance of impact under NSW legislation

The proposed modification would be unlikely to cause a significant impact on the environment. Therefore, it is not necessary for an environmental impact statement to be prepared and approval to be sought from the Minister for Planning and Public Spaces under Division 5.2 of the EP&A Act. A Biodiversity Development Assessment Report or Species Impact Statement is not required. The proposed modification is subject to assessment under Division 5.1 of the EP&A Act. Consent from Council is not required.

8.3.2 Significance of impact under Australian legislation

The proposed modification is not likely to have a significant impact on matters of national environmental significance or the environment of Commonwealth land within the meaning of

the *Environment Protection and Biodiversity Conservation Act 1999*. A referral to the Australian Department of the Agriculture, Water and the Environment is not required.

9 Certification

This addendum review of environmental factors provides a true and fair review of the proposed modification in relation to its potential effects on the environment. It addresses to the fullest extent possible all matters affecting or likely to affect the environment as a result of the proposed modification.

Environmental Planner

Hills Environmental

Date: 5 August 2021

I have examined this review of environmental factors and accept it on behalf of Transport for NSW.

Project Manager

Mona Vale Road East Upgrade

Date: 5 August 2021

10 References

Austroads. (2017). *Guide to Road Design Part 6A: Paths for Walking and Cycling.* Sydney: Austroads.

Department of Planning. (1995). *Is an EIS required?* Sydney: Department of Planning.

Department of Urban Affairs and Planning. (1996). *Roads and Related Facilities EIS Guideline.* Sydney: Department of Urban Affairs and Planning.

Northern Beaches Council. (2020). *Northern Beaches Bike Plan.* Sydney: Northern Beaches Council.

Roads and Maritime Services. (2016). *Guideline for Biodiversity Offsets.* Sydney: Roads and Maritime Services.

Transport for NSW. (2020). *Environmental Impact Assessment Practice Note: Guidelines for Landscape Character and Visual Impact Assessment.* Sydney: Roads and Maritime Services.

Terms and acronyms used in this REF

Term / Acronym	Description
BC Act	Biodiversity Conservation Act 2016 (NSW).
CEMP	Construction environmental management plan
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW). Provides the legislative framework for land use planning and development assessment in NSW
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth). Provides for the protection of the environment, especially matters of national environmental significance, and provides a national assessment and approvals process.
Heritage Act	Heritage Act 1977 (NSW)
ISEPP	State Environmental Planning Policy (Infrastructure) 2007
LEP	Local Environmental Plan. A type of planning instrument made under Part 3 of the EP&A Act.
NCA	Noise Catchment Area
NML	Noise management Level
NPW Act	National Parks and Wildlife Act 1974 (NSW)
POEO Act	Protection of the Environment Operations Act 1997(NSW)
SEPP	State Environmental Planning Policy. A type of planning instrument made under Part 3 of the EP&A Act.
QA Specifications	Specifications developed by Roads and Maritime Services for use with road work and bridge work contracts let by Roads and Maritime Services.

Appendix A

Consideration of clause 228(2) factors and matters of national environmental significance and Commonwealth land

Clause 228(2) Checklist

In addition to the requirements of the Is an EIS required? guideline (DUAP 1995/1996) and the Roads and Related Facilities EIS Guideline (DUAP 1996) as detailed in the REF, the following factors, listed in clause 228(2) of the Environmental Planning and Assessment Regulation 2000, have also been considered to assess the likely impacts of the proposal on the natural and built environment.

Factor	Impact
a) Any environmental impact on a community? The proposed modification would have impacts during construction (visual, vegetation removal) but would improve safety and active transport infrastructure once complete.	Short-term negative Long-term positive
b) Any transformation of a locality? The proposed modification would not transform a locality.	Nil
c) Any environmental impact on the ecosystems of the locality? The proposed modification would have some potential impacts native animals and plants, ecological communities and their habitats. Impacts have been assessed as not significant.	Negative (not significant)
d) Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality? The proposed modification would have some visual impacts associated with the new shared path and the removal of vegetation. These impacts would reduce over time with appropriate landscaping and urban design treatments.	Short-term negative
e) Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations? The proposed modification is not expected to affect Aboriginal or non-Aboriginal heritage. Safeguards have been proposed to address this impact.	Nil
f) Any impact on the habitat of protected fauna (within the meaning of the *National Parks and Wildlife Act 1974*)? There would be some impact on habitat for native species. These species would not be solely reliant on the areas of affected habitat.	Minor short-term negative
g) Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air? The proposed modification would not endanger animals, plants or other forms of life.	Nil
h) Any long-term effects on the environment? The proposed modification would improve safety and active transport infrastructure once complete. It would also reduce flooding impacts on private property.	Long-term positive
j) Any risk to the safety of the environment? The proposed modification does not represent a risk to the safety of the environment.	Nil
k) Any reduction in the range of beneficial uses of the environment? The proposed modification would not reduce the range of beneficial uses of the environment.	Nil

Factor	Impact
l) Any pollution of the environment? No pollution of the environment is expected to result from the proposed modification with the implementation of the proposed safeguards and mitigation measures.	Nil
m) Any environmental problems associated with the disposal of waste? Waste generated during construction would be removed from the site and disposed of legally. No environmental problems are anticipated for the disposal of waste.	Nil
n) Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply? The proposed modification would not increase demand for resources, which are, or are likely to become, in short supply.	Nil
o) Any cumulative environmental effect with other existing or likely future activities? There are potential cumulative noise and traffic impacts associated with other planned developments in the area. This can be adequately addressed through the proposed safeguards and management measures, including coordination with other projects where required.	Short-term negative
p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions? The proposed modification would not influence coastal processes and/or coastal hazards.	Nil

Matters of National Environmental Significance and Commonwealth land

Under the environmental assessment provisions of the EPBC Act 1999, the following matters of national environmental significance and impacts on Commonwealth land are required to be considered to assist in determining whether the proposal should be referred to the Australian Government Department of Agriculture, Water and the Environment.

A referral is not required for proposed actions that may affect nationally listed threatened species, endangered ecological communities and migratory species. Impacts on these matters are still assessed as part of the REF in accordance with Australian Government significant impact criteria and taking into account relevant guidelines and policies.

Factor	Impact
a) Any impact on a World Heritage property? The proposed modification would not have any impact on a World Heritage property.	Nil
b) Any impact on a National Heritage place? The proposed modification would not have any impact on a National Heritage Place.	Nil
c) Any impact on a wetland of international importance? The proposed modification would not affect a wetland of international importance.	Nil
d) Any impact on a listed threatened species or communities? Some Commonwealth listed threatened species have the potential to occur in the local area. The nature, scale and location of the proposal is such that direct impacts on these species or their habitats are not expected. Indirect impacts are also not expected.	Not significant
e) Any impacts on listed migratory species? Some Commonwealth listed migratory species have the potential to occur in the local area. The nature, scale and location of the proposal is such that impacts on these species or their habitats are not expected. Indirect impacts are also not expected.	Not significant
f) Any impact on a Commonwealth marine area? The proposed modification would not have any impact on a Commonwealth marine area.	Nil
g) Does the proposal involve a nuclear action (including uranium mining)? The proposed modification does not involve a nuclear action.	Nil
h) Additionally, any impact (direct or indirect) on the environment of Commonwealth land? The proposed modification would not impact Commonwealth land.	Nil

Appendix B

Statutory consultation checklists

Certain development types

Development type	Description	Yes / No	If 'yes' consult with	ISEPP clause
Car Park	Does the project include a car park intended for the use by commuters using regular bus services?	No		ISEPP cl. 95A
Bus Depots	Does the project propose a bus depot?	No		ISEPP cl. 95A
Permanent road maintenance depot and associated infrastructure	Does the project propose a permanent road maintenance depot or associated infrastructure such as garages, sheds, tool houses, storage yards, training facilities and workers' amenities?	No		ISEPP cl. 95A

Development within the coastal zone

Development type	Description	Yes / No	If 'yes' consult with	ISEPP clause
Development with impacts on certain land within the coastal zone	Is the proposal within a coastal vulnerability area and is inconsistent with a certified coastal management program applying to that land?	No		ISEPP cl. 15A

Council related infrastructure or services

Development type	Description	Yes / No	If 'yes' consult with	ISEPP clause
Stormwater	Are the works likely to have a substantial impact on the stormwater management services which are provided by council?	No		ISEPP cl.13(1)(a)
Traffic	Are the works likely to generate traffic to an extent that will strain the capacity of the existing road system in a local government area?	No		ISEPP cl.13(1)(b)
Sewerage system	Will the works involve connection to a council owned sewerage system? If so, will this connection have a substantial impact on the capacity of any part of the system?	No		ISEPP cl.13(1)(c)

Development type	Description	Yes / No	If 'yes' consult with	ISEPP clause
Water usage	Will the works involve connection to a council owned water supply system? If so, will this require the use of a substantial volume of water?	No		ISEPP cl.13(1)(d)
Temporary structures	Will the works involve the installation of a temporary structure on, or the enclosing of, a public place which is under local council management or control? If so, will this cause more than a minor or inconsequential disruption to pedestrian or vehicular flow?	No		ISEPP cl.13(1)(e)
Road & footpath excavation	Will the works involve more than minor or inconsequential excavation of a road or adjacent footpath for which council is the roads authority and responsible for maintenance?	Consultation has already occurred. Shared path to be delivered in cooperation with Council.		ISEPP cl.13(1)(f)

Local heritage items

Development type	Description	Yes / No	If 'yes' consult with	ISEPP clause
Local heritage	Is there is a local heritage item (that is not also a State heritage item) or a heritage conservation area in the study area for the works? If yes, does a heritage assessment indicate that the potential impacts to the heritage significance of the item/area are more than minor or inconsequential?	No		ISEPP cl.14

Flood liable land

Development type	Description	Yes / No	If 'yes' consult with	ISEPP clause
Flood liable land	Are the works located on flood liable land? If so, will the works change flood patterns to more than a minor extent?	No		ISEPP cl.15

Development type	Description	Yes / No	If 'yes' consult with	ISEPP clause
Flood liable land	Are the works located on flood liable land? (to any extent). If so, do the works comprise more than minor alterations or additions to, or the demolition of, a building, emergency works or routine maintenance.	Yes	State Emergency Service	ISEPP cl.15AA

Public authorities other than councils

Development type	Description	Yes / No	If 'yes' consult with	ISEPP clause
National parks and reserves	Are the works adjacent to a national park or nature reserve, or other area reserved under the *National Parks and Wildlife Act 1974*, or on land acquired under that Act?	No	Office of Environment and Heritage	ISEPP cl.16(2)(a)
National parks and reserves	Are the works on land in Zone E1 National Parks and Nature Reserves or in a land use zone equivalent to that zone?	No	Office of Environment and Heritage	ISEPP cl.16(2)(b)
Aquatic reserves	Are the works adjacent to an aquatic reserve or a marine park declared under the *Marine Estate Management Act 2014*?	No	Department of Industry	ISEPP cl.16(2)(c)
Sydney Harbour foreshore	Are the works in the Sydney Harbour Foreshore Area as defined by the *Sydney Harbour Foreshore Authority Act 1998?*	No	Sydney Harbour Foreshore Authority	ISEPP cl.16(2)(d)
Bush fire prone land	Are the works for the purpose of residential development, an educational establishment, a health services facility, a correctional centre or group home in bush fire prone land?	No	Rural Fire Service	ISEPP cl.16(2)(f)
Artificial light	Would the works increase the amount of artificial light in the night sky and that is on land within the dark sky region as identified on the dark sky region map? (Note: the dark sky region is within 200 kilometres of the Siding Spring Observatory)	No	Director of the Siding Spring Observatory	ISEPP cl.16(2)(g)

Development type	Description	Yes / No	If 'yes' consult with	ISEPP clause
Defence communications buffer land	Are the works on buffer land around the defence communications facility near Morundah? (Note: refer to Defence Communications Facility Buffer Map referred to in clause 5.15 of Lockhardt LEP 2012, Narrandera LEP 2013 and Urana LEP 2011.	No	Secretary of the Commonwealth Department of Defence	ISEPP cl.16(2)(h)
Mine subsidence land	Are the works on land in a mine subsidence district within the meaning of the *Mine Subsidence Compensation Act 1961*?	No	Mine Subsidence Board	ISEPP cl.16(2)(i)

Appendix C

Biodiversity Assessment

Appendix D

Aboriginal cultural heritage advice

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Customer feedback
Transport for NSW
Locked Bag 928,
North Sydney NSW 2059

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