Transport for NSW

Spring Farm Parkway Stage 1

Addendum Review of Environmental Factors No. 4

September 2024

NSW GOVERNMENT

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Acknowledgement of Country

Transport for NSW acknowledges the traditional custodians of the land on which we work and live.

We pay our respects to Elders past and present and celebrate the diversity of Aboriginal people and their ongoing cultures and connections to the lands and waters of NSW.

Many of the transport routes we use today – from rail lines, to roads, to water crossings – follow the traditional Songlines, trade routes and ceremonial paths in Country that our nation's First Peoples followed for tens of thousands of years.

Transport for NSW is committed to honouring Aboriginal peoples' cultural and spiritual connections to the land, waters and seas and their rich contribution to society.

Prepared by bd infrastructure and Transport for NSW

Executive summary

The proposed modification

Transport for NSW (Transport) proposes to modify the Spring Farm Parkway Stage 1 project, as detailed in the project Review of Environmental Factors (REF) (Jacobs, February 2019), supporting submissions report (Jacobs, October 2019), Addendum REF No. 1 (Jacobs, November 2021), Addendum REF No. 2 (Jacobs, 2022) and Addendum REF No. 3 (bd infrastructure, 2022). The project, as described in these documents, is referred to as the 'approved project'.

The proposed modification would include:

- Area 1: A decrease to the direct impact boundary to recognise an area that is no longer required for use as a construction access route
- Area 2: Obtain access to a designated no-go area to allow for stormwater lining works, construction of a temporary working platform, and installation and maintenance of sediment controls
- Area 3: An increase to the approved project boundary and direct impact boundary to enable the removal and maintenance of existing vegetation and sediment in the unnamed drainage line.

Background

Spring Farm Parkway Stage 1 forms part of the delivery of Spring Farm Parkway, which has been divided into two stages. Once both stages are complete, Spring Farm Parkway would provide a 6.1 kilometre east-west arterial road link between Camden Bypass, the M31 Hume Motorway (the Hume Motorway) and Menangle Road in Sydney's southwest, about 11 kilometres south of Campbelltown and about 70 kilometres from Sydney CBD. Spring Farm Parkway would service existing and future residential land releases including Spring Farm, Elderslie, Menangle Park and Mount Gilead.

Spring Farm Parkway Stage 1 was assessed in a project REF and placed on public display between 27 February 2019 and 29 March 2019 for community and stakeholder comment. A submissions report was prepared in October 2019 to respond to any issues raised by the community and stakeholders. Project determination occurred in November 2019. Spring Farm Parkway Addendum REF was prepared in November 2021 to include additional ancillary facilities and additional construction access routes. Spring Farm Parkway Addendum 2 REF was prepared in May 2022 to change access arrangements and project impact boundaries. Spring Farm Parkway Addendum 3 REF was prepared in November 2022 to amend the approved direct impact boundary and include construction of a new crossover facility within the median of the Hume Motorway.

Need for the proposed modification

The proposed modification is needed to better support the construction of the approved project.

The proposed modification would include the lining of existing stormwater pipes underneath the Hume Motorway at Area 2. This would assist in maintaining the integrity and prolonging the life of the existing stormwater pipes.

The proposed modification would also include the removal and maintenance of existing vegetation and sediment in the unnamed drainage line. This would assist in removing obstructions and improve the functioning of the stormwater system for the surrounding catchment, including at Menangle Road.

A decrease to the direct impact boundary at Area 1 would assist in reducing environmental impacts associated with the approved project.

Proposal objectives

The objectives of the proposed modification are consistent with those outlined in the project REF. These include:

- Support residential growth by providing arterial road access to the Menangle Park land release

- Support employment growth by improving arterial road access to the Hume Motorway and Campbelltown
- Connect future communities to the NSW state road network
- Provide access for buses
- Provide a minimum of 1 in 100-year flood immunity
- Provide access for B-double vehicles
- Provide east-west connectivity for proposed and future land use
- Provide the provisions for a Smart Motorway enabled connection to the Hume Motorway.

Options considered

Transport investigated the 'do nothing' option and the option of proceeding with the proposed modification.

The proposed modification was selected as preferred because it would support the construction of the project and support the project objectives by:

- Allowing for stormwater lining works to be completed
- Allowing for the maintenance of an existing open drainage line
- Allowing for additional space for environmental controls, including the installation and maintenance of sediment controls.

The proposed modification would have some environmental impacts, however these have been assessed as minor and can be appropriately managed with the implementation of the proposed safeguards and management measures.

Statutory and planning framework

The proposed modification is categorised as development for the purpose of a road and is being carried out by or on behalf of a public authority. Under section 2.109 of SEPP (Transport and Infrastructure), 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 *Environmental Planning and Assessment Act 1979* (EP&A Act). Consent from Council is not required.

Community and stakeholder consultation

Community and stakeholder consultation for the approved project is documented in Chapter 5 of the project REF, in the submissions report and in subsequent addendum REFs. Additional community and stakeholder consultation was not considered for the proposed modification due to the minor nature of works to be completed.

Environmental impacts

The main environmental impacts for the proposed modification include:

Biodiversity

The proposed modification would result in some changes to the amount of vegetation to be impacted as a result of the project (including to the Cumberland Plain Woodland, which is listed as Critically Endangered under the *Biodiversity Conservation Act 2016* (BC Act)). This would include a reduction to the overall impact area for the Cumberland Plain Woodland (low condition Derived Native Grassland) from 8.29 hectares to 8.18 hectares, and an increase to the overall impact area for the Cumberland Plain Woodland (low condition woodland dominated by African Olive) from 3.61 hectares to 3.65 hectares.

The biodiversity assessment concluded that a significant impact to a threatened species, population or community would be unlikely. No additional offsets to those described in the Addendum REF No. 3 would be required for the proposed modification.

Operational impacts associated with the proposed modification would be consistent with the impacts outlined in Section 6.7.3 of the project REF.

Justification and conclusion

The proposed modification would better support the construction of the approved project.

While there would be some potential environmental impacts associated with the proposed modification, they would be minor and would be adequately addressed through the proposed safeguards and management measures.

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1. Introduction

1.1 Proposed modification overview

Transport for NSW (Transport) proposes to modify the Spring Farm Parkway Stage 1 by altering the previously approved project and direct impact boundaries (proposed modification). Key features of the proposed modification would include:

- Area 1: A decrease to the direct impact boundary to recognise an area that is no longer required for use as a construction access route
- Area 2: Obtain access to a designated no-go area to allow for stormwater lining works, construction of a temporary working platform, and installation and maintenance of sediment controls
- Area 3: An increase to the approved project boundary and direct impact boundary to enable the removal and maintenance of existing vegetation and sediment in the unnamed drainage line.

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

A project Review of Environmental Factors (REF) was prepared for the Spring Farm Parkway Stage 1 in February 2019 (referred to in this addendum REF as the 'project REF'). The project REF was placed on public display between 27 February 2019 and 29 March 2019 for community and stakeholder comment. A submissions report dated October 2019 was prepared to respond to issues raised.

In addition, the following addendum REFs for the Spring Farm Parkway Stage 1 have been prepared:

- Spring Farm Parkway Addendum REF (November 2021) – determined on 16 November 2021 referred to in this addendum as 'Addendum REF No. 1'. Addendum REF No. 1 included design changes, additional ancillary facilities, and additional construction access routes to provide improved constructability and further long-term operational benefits of the project
- Spring Farm Parkway Addendum 2 REF (May 2022) – determined on 3 June 2022 and referred to in this addendum as 'Addendum REF No. 2'. Addendum REF No. 2 included decommissioning of electricity lines, changes to construction access, an additional ancillary facility, and various changes to the direct impact boundary for the project
- Spring Farm Parkway Addendum 3 REF (November 2022) – determined on 18 November 2024 and referred to in this addendum as 'Addendum REF No. 3'. Addendum REF No. 3 included increases to the approved direct impact boundary (and corresponding changes to 'no go' areas), decreases to the approved direct impact boundary to recognise areas that are no longer required for construction, and construction of a new crossover facility within the median of the Hume Motorway immediately to the north of the bridge over the Main Southern Railway Line.

Figure 1-1: Location of the proposed modification

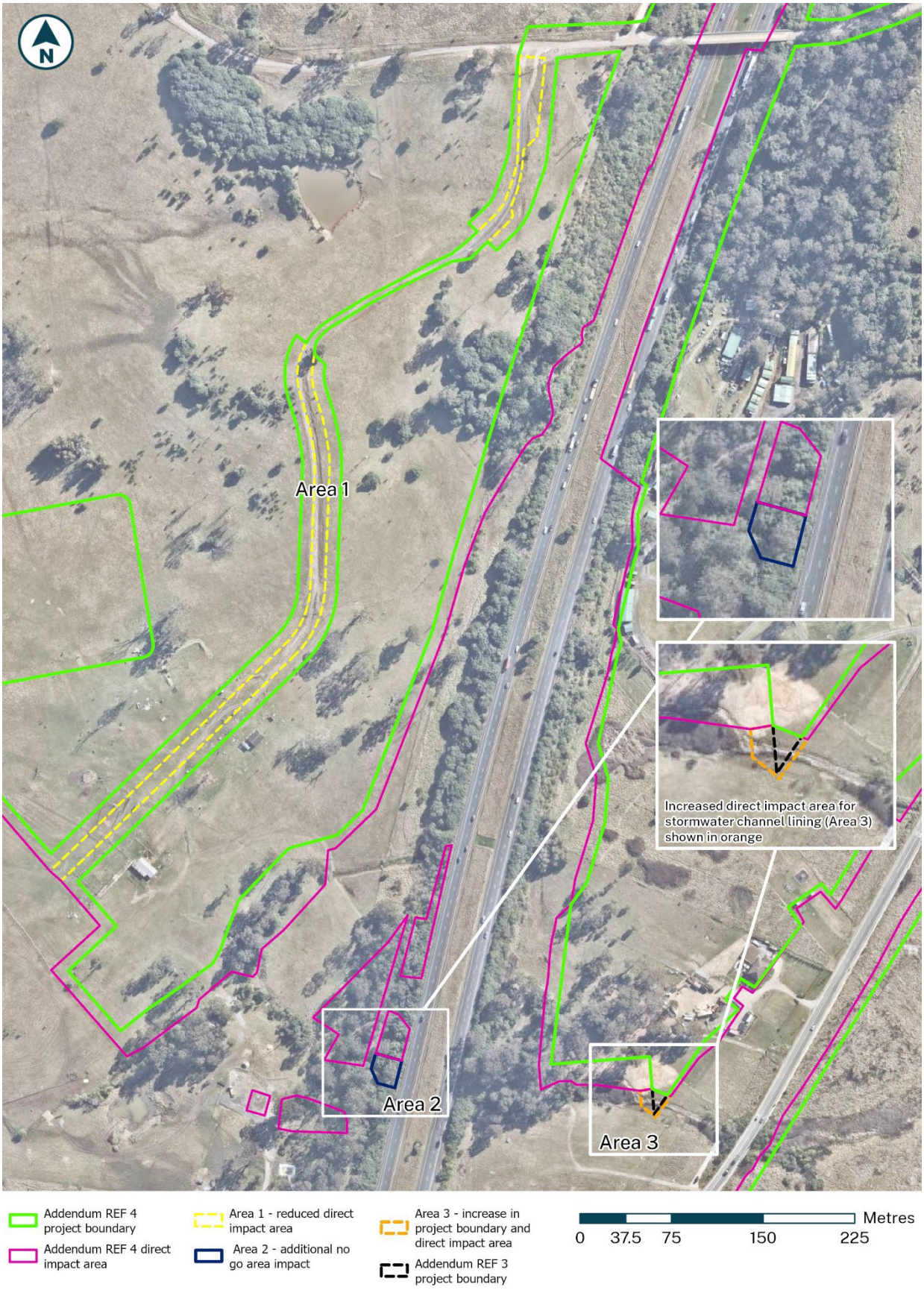

Figure 1-2: The proposed modification

1.2 Purpose of the report

This addendum REF has been prepared by bd infrastructure on behalf of Transport. For the purposes of these works, Transport 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 approved 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 modification and assessment of associated environmental impacts has been carried out in context of section 171 of the Environmental Planning and Assessment Regulation 2021, Guidelines for Division 5.1 assessments (Department of Planning and Environment, 2022), Roads and Road Related Facilities EIS Guideline (Department of Urban Affairs and Planning, 1996), the *Biodiversity Conservation Act 2016* (BC Act), the *Fisheries Management Act 1994* (FM Act), and the Australian Government's *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 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 addendum REF would be considered when assessing:

- Whether the proposed modification is likely to result in 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 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 proposed modification to significantly impact any other matters of national environmental significance or Commonwealth land and therefore the need to make a referral to the Australian Department of Climate Change, Energy, the Environment and Water for a decision by the Australian Government 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 approved 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 approved project.

The proposed modification is needed to better support construction of the approved project.

The proposed modification would include the lining of existing stormwater pipes underneath the Hume Motorway at Area 2. This would assist in maintaining the integrity and prolonging the life of the existing stormwater pipes.

The proposed modification would also include the removal and maintenance of existing vegetation and sediment in the unnamed drainage line at Area 3. This would assist in removing obstructions and improve the functioning of the stormwater system for the surrounding catchment, including at Menangle Road.

A decrease to the direct impact boundary at Area 1 would assist in reducing some environmental impacts associated with the approved project.

2.2 Proposal objectives and development criteria

Section 2.3 of the project REF identifies the proposal objectives and development criteria. The proposed modification would assist in meeting these proposal objectives and development criteria initially outlined in the project REF.

2.3 Alternatives and options considered

2.3.1 Methodology for selection of preferred option

Methodology for selection of the preferred option for the proposed modification is consistent with the methodology outlined in Section 2.4.1 of the project REF.

2.3.2 Identified options

Transport investigated the 'do nothing' option and the option of proceeding with the proposed modification.

2.3.3 Analysis of options

The proposed modification would allow the more efficient delivery of the approved project and support the project objectives by:

- Allowing for stormwater lining works to be completed
- improving the functioning of the stormwater system for the surrounding catchment, including at Menangle Road
- Allowing for additional space for environmental controls, including the installation and maintenance of sediment controls.

The proposed modification would have some environmental impacts, however these have been assessed as minor (refer to Chapter 6) and would be appropriately managed with the implementation of the proposed safeguards and management measures (refer to Chapter 7).

While the 'do nothing' option would not have any incremental environmental impacts, it would not provide the benefits outlined above.

2.4 Preferred option

The preferred option would be to proceed with the proposed modification as evaluated in Section 2.3.3.

The preferred option is needed to address the need for the proposed modification (refer to Section 2.1). 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 proposes to modify the Spring Farm Parkway Stage 1 by altering the previously approved project and direct impact boundaries (proposed modification).

Key features of the proposed modification would include:

- Area 1: A decrease to the direct impact boundary to recognise an area that is no longer required for use as a construction access route
- Area 2: Access to an approved no-go area to allow for stormwater lining works, construction of a temporary working platform, and installation and maintenance of sediment controls
- Area 3: An increase to the approved project boundary and direct impact boundary to enable the removal and maintenance of existing vegetation and sediment in the unnamed drainage line.

Key features of the proposed modification are shown on Figure 1-2 and described in Table 3-1.

Table 3-1: Increased or decreased direct impact areas

Area ID	Increase / decrease	Estimated area (m^2)	Proposed use
1	Decrease	2,250 m^2	The direct impact boundary would be decreased as the area is no longer required (as it has not been used) as a construction access route.
2	Increase	480 m^2	The proposed modification would require access to a designated no-go area to allow for: • Stormwater lining works • Construction of a working temporary platform • Installation and maintenance of sediment controls. Following completion of the works, the exposed area would be stabilised with landscaping and the temporary platform would be removed.
3	Increase	465 m^{2*}	The increased area (which includes the direct impact boundary and project boundary assessed as part of Addendum REF No. 3) would be required to enable the removal and maintenance of existing vegetation and sediment in the unnamed drainage line. This would include vegetation removal and excavation, and the installation and maintenance of sediment controls. Following completion of the works, the exposed area would be stabilised with landscaping.

*Includes 350m^2 of the direct impact boundary and 115m^2 of the project boundary assessed in Addendum REF No. 3.

3.2 Design

3.2.1 Design criteria

The design criteria for the proposed modification are generally consistent with Section 3.2 of the project REF.

3.2.2 Engineering constraints

The engineering constraints for the proposed modification are generally consistent with Section 3.3 of the project REF.

3.3 Construction activities

3.3.1 Work methodology

The work methodology remains generally consistent with Section 3.4.2 of the project REF and in subsequent addendum REFs.

The proposed change at Area 1 does not involve any additional physical work. This area is to be removed from the direct impact area.

The proposed change at Area 2 involves access to allow the lining of existing stormwater pipes underneath the Hume Motorway. This would involve clearing vegetation for access, then lining the pipes with the new liner to be inserted into the culvert via the inlet and pulled through the pipe. The liner would be cured in place using ultra-violet light.

The proposed change at Area 3 would involve excavation and shaping of the unnamed drainage line consistent with its original profile. The drainage line would then be lined with jute mesh, topsoil would be placed on the channel batters, followed by application of hydromulch to the channel batters.

3.3.2 Construction hours and duration

Construction hours and duration remain as described in Section 3.4.4 of the project REF and in subsequent addendum REFs. Changes to working hours are not proposed for the modification.

3.3.3 Plant and equipment

Proposed plant and equipment remain as described in Section 3.4.5 of the project REF and in subsequent addendum REFs.

3.3.4 Earthworks

Earthworks required as part of the proposed modification would be limited to minor excavation. Uncontaminated material that is not suitable for use as structural fill could be used in areas of landscaping. Material unsuitable for construction use would need to be transported offsite by a licensed contractor for disposal at a licensed waste management facility following testing and classification (refer to Section 7.2). Any unsuitable or surplus material would be managed in accordance with Transport policy.

3.3.5 Source and quantity of materials

Source and quantity of materials remains as described in Section 3.4.7 of the project REF and in subsequent addendum REFs.

3.3.6 Traffic management and access

The Traffic Management Plan for the project (refer to mitigation measure TT1) has been revised to reflect the opening of the project to general traffic on 29 August 2024. Traffic movements for the proposed modification would be in accordance with the revised Traffic Management Plan.

3.4 Ancillary facilities

No additional ancillary facilities are required for the proposed modification.

3.5 Public utility adjustment

No public utility adjustments are required for the proposed modification.

3.6 Property acquisition

This proposed modification does not seek to make changes to property acquisition as described in Section 3.7 of the project REF and subsequent addendum REFs.

4. Statutory and planning framework

4.1 Environmental Planning and Assessment Act 1979

4.1.1 State Environmental Planning Policies

State Environmental Planning Policy (Transport and Infrastructure) 2021

Chapter 2 (Infrastructure) of SEPP (Transport and Infrastructure) aims to facilitate the effective delivery of infrastructure across the State.

Section 2.109 of SEPP (Transport and Infrastructure) 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 the construction of a road as well as upgrade of existing road infrastructure and would be carried out by Transport, it can be assessed under Division 5.1 of the EP&A Act. Development consent from Council is not required.

The proposal is not located on land reserved under the *National Parks and Wildlife Act 1974* (NPW Act) and does not require development consent or approval under:

- State Environmental Planning Policy (Resilience and Hazards) 2021
- State Environmental Planning Policy (Planning Systems) 2021
- State Environmental Planning Policy (Precincts – Central River City)
- State Environmental Planning Policy (Precincts – Eastern Harbour City)
- State Environmental Planning Policy (Precincts – Regional) 2021
- State Environmental Planning Policy (Precincts – Western Parkland City) 2021.

Section 2.10 to 2.15 of SEPP (Transport and Infrastructure) 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 SEPP (Transport and Infrastructure) (where applicable), is discussed in Chapter 5 of this addendum REF.

State Environmental Planning Policy (Biodiversity and Conservation) 2021

Chapter 4 Koala habitat protection

The City of Campbelltown Local Government Area (LGA) is listed in Schedule 2 of the Biodiversity and Conservation SEPP.

While the requirements of Chapter 4 of the Biodiversity and Conservation SEPP do not apply to project approval under Division 5.1 of the EP&A Act, the requirements have nevertheless been previously considered. A biodiversity assessment carried out for the project REF (refer to Section 6.7 of the project REF) found that it was unlikely that the study area contains core koala habitat as defined in the now-repealed State Environmental Planning Policy No 44 – Koala Habitat Protection, given the poor condition of the habitats in the study area and the absence of any signs of koalas during the targeted surveys.

The Spring Farm Parkway Stage 1 Biodiversity Assessment Report (Niche Environment and Heritage, 2019), which was carried out for the approved project, identified that the project area was unlikely to contain core koala habitat, given the poor condition of the habitats and the absence of any signs of the species during targeted surveys. As such, it is considered unlikely that the proposed modification would have a significant impact on koalas.

Chapter 8 Sydney drinking water catchment

Chapter 8 (Sydney Drinking Water Catchment) of the State Environmental Planning Policy (Biodiversity and Conservation) 2021 relates to the use of land within the Sydney drinking water catchment. Section 8.11 of the SEPP requires consideration of whether or not an activity to which Division 5.1 of the EP&A Act applies would have a neutral or beneficial effect on water quality before carrying out the activity.

The proposed modification does not lie within the boundary of the Sydney Drinking Water Catchment and therefore the above assessment is not required.

Chapter 9 Hawkesbury-Nepean River

The proposed modification is located on land to which Chapter 9 of the Biodiversity Conservation SEPP applies. The aim of this chapter is to protect the environment of the Hawkesbury-Nepean River system by ensuring that the impacts of future land uses are considered in a regional context.

Under section 171A of the Environmental Planning and Assessment Regulation 2021 a determining authority must consider certain matters identified in Part 6.2 of the Biodiversity Conservation SEPP. These matters are considered in Table 4-1.

Table 4-1: Applicable planning considerations

Consideration	Comment
Clause 6.6 water quality and quantity	
(1) In deciding whether to grant development consent to development on land in a regulated catchment, the consent authority must consider the following —	
(a) whether the development will have a neutral or beneficial effect on the quality of water entering a waterway,	At Area 2 and Area 3, the proposed modification would not substantially change ground disturbance and would be subject to safeguards and management measures to address water quality (refer to Section 7.2). The proposed modification at Area 2 and Area 3 is expected to have a neutral effect on water quality. At Area 1, the proposed modification would have a beneficial effect on water quality compared to what was originally expected, as it would no longer be required for construction.
(b) whether the development will have an adverse impact on water flow in a natural waterbody,	The proposed modification at Area 1, Area 2 and Area 3 would not affect the flow of water entering a natural waterway.
(c) whether the development will increase the amount of stormwater run-off from a site,	The proposed modification at Area 1, Area 2 and Area 3 would not increase the amount of stormwater runoff.
(d) whether the development will incorporate on-site stormwater retention, infiltration or reuse,	No stormwater retention, infiltration or reuse is proposed at Area 1, Area 2 and Area 3.
(e) the impact of the development on the level and quality of the water table,	The proposed modification is not expected to intercept groundwater and would not involve groundwater drawdown at Area 1, Area 2 and Area 3.
(f) the cumulative environmental impact of the development on the regulated catchment,	The proposed modification at Area 2 and Area 3 would have negligible impacts on the catchment and therefore the potential for cumulative impacts would be limited. Area 1 would not have a cumulative environmental impact of the development on the regulated catchment, as it would no longer be required for construction.
(g) whether the development makes adequate provision to protect the quality and quantity of ground water.	The proposed modification is not expected to impact groundwater at Area 1, Area 2 and Area 3.
(2) Development consent must not be granted to development on land in a regulated catchment unless the consent authority is satisfied the development ensures —	
(a) the effect on the quality of water entering a natural waterbody will be as close as possible to neutral or beneficial, and	The proposed modification at Area 2 and Area 3 does not substantially change ground disturbance and would be subject to safeguards and management measures to

Consideration	Comment
	address water quality (refer to Section 7.2). The proposed modification at Area 2 and Area 3 is expected to have a neutral effect on water quality. At Area 1, the proposed modification would have a beneficial effect on water quality compared to what was originally expected, as it would no longer be required for construction.
(b) the impact on water flow in a natural waterbody will be minimised.	The proposed modification at Area 2 and Area 3 would not affect the flow of water entering a natural waterway. The proposed modification at Area 1 would not affect the flow of water entering a natural waterway, as it would no longer be required for construction.
6.7 Aquatic ecology	
(1) In deciding whether to grant development consent to development on land in a regulated catchment, the consent authority must consider the following —	
(a) whether the development will have a direct, indirect or cumulative adverse impact on terrestrial, aquatic or migratory animals or vegetation,	Potential impacts of the proposed modification at Area 1, Area 2 and Area 3 are discussed in Chapter 6. The biodiversity assessment concluded that a significant impact to a threatened species, population or community would be unlikely (refer to Section 6.1).
(b) whether the development involves the clearing of riparian vegetation and, if so, whether the development will require — (i) a controlled activity approval under the *Water Management Act 2000*, or (ii) a permit under the Fisheries Management Act 1994,	The proposed modification does not require any permits under the *Water Management Act 2000* or the *Fisheries Management Act 1994*.
(c) whether the development will minimise or avoid — (i) the erosion of land abutting a natural waterbody, or (ii) the sedimentation of a natural waterbody,	Erosion and sedimentation at Area 2 and Area 3 would be managed through existing site-specific erosion and sediment control plans implemented as part of the CEMP (refer to Section 7.2).
(d) whether the development will have an adverse impact on wetlands that are not in the coastal wetlands and littoral rainforests area,	The proposed modification would not impact wetlands.
(e) whether the development includes adequate safeguards and rehabilitation measures to protect aquatic ecology,	The proposed modification would not impact aquatic habitats.
(f) if the development site adjoins a natural waterbody — whether additional measures are required to ensure a neutral or beneficial effect on the water quality of the waterbody. Example — Additional measures may include the incorporation of a vegetated buffer between the waterbody and the site.	The proposed modification does involve work within an unnamed drainage line at Area 3 and would be subject to safeguards and management measures to address water quality (refer to Section 7.2). The proposed modification is expected to have a neutral effect on water quality.
(2) Development consent must not be granted to development on land in a regulated catchment unless the consent authority is satisfied of the following —	

Consideration	Comment
(a) the direct, indirect or cumulative adverse impact on terrestrial, aquatic or migratory animals or vegetation will be kept to the minimum necessary for the carrying out of the development,	Potential impacts of the proposed modification at Area 1, Area 2 and Area 3 are discussed in Chapter 6. The biodiversity assessment concluded that a significant impact to a threatened species, population or community would be unlikely (refer to Section 6.1).
(b) the development will not have a direct, indirect or cumulative adverse impact on aquatic reserves,	The proposed modification would not impact upon any aquatic reserves at Area 2 or Area 3.
(c) if a controlled activity approval under the Water Management Act 2000 or a permit under the Fisheries Management Act 1994 is required in relation to the clearing of riparian vegetation — the approval or permit has been obtained,	The proposed modification does not require any permits under the *Water Management Act 2000* or the *Fisheries Management Act 1994*.
(d) the erosion of land abutting a natural waterbody or the sedimentation of a natural waterbody will be minimised,	Erosion and sedimentation would be managed through existing site-specific erosion and sediment control plans implemented as part of the CEMP (refer to Section 7.2).
(e) the adverse impact on wetlands that are not in the coastal wetlands and littoral rainforests area will be minimised.	The proposed modification would not impact wetlands at Area 2 or Area 3.
6.8 Flooding	
(1) In deciding whether to grant development consent to development on land in a regulated catchment, the consent authority must consider the likely impact of the development on periodic flooding that benefits wetlands and other riverine ecosystems.	The proposed modification would not affect periodic flooding of wetlands or riverine systems at Area 2 or Area 3.
(2) Development consent must not be granted to development on flood liable land in a regulated catchment unless the consent authority is satisfied the development will not —	
(a) if there is a flood, result in a release of pollutants that may have an adverse impact on the water quality of a natural waterbody, or	The proposed modification is not on flood effected land at Area 2 or Area 3.
(b) have an adverse impact on the natural recession of floodwaters into wetlands and other riverine ecosystems.	The proposed modification would not have any impact on the recession of floodwaters into wetlands and riverine ecosystems at Area 2 or Area 3.
6.9 Recreation and public access	
(1) In deciding whether to grant development consent to development on land in a regulated catchment, the consent authority must consider —	
(a) the likely impact of the development on recreational land uses in the regulated catchment, and	The proposed modification would not have any impacts on recreational land uses in the regulated catchment at Area 2 or Area 3.
(b) whether the development will maintain or improve public access to and around foreshores without adverse impact on natural waterbodies, watercourses, wetlands or riparian vegetation.	The proposed modification would have no impacts on public access to and around foreshores at Area 2 or Area 3.

Consideration	Comment
(2) Development consent must not be granted to development on land in a regulated catchment unless the consent authority is satisfied of the following—	
(a) the development will maintain or improve public access to and from natural waterbodies for recreational purposes, including fishing, swimming and boating, without adverse impact on natural waterbodies, watercourses, wetlands or riparian vegetation,	The proposed modification would have no impacts on public access to and around foreshores at Area 2 or Area 3.
(b) new or existing points of public access between natural waterbodies and the site of the development will be stable and safe,	No new points of public access are proposed for Area 2 or Area 3.
(c) if land forming part of the foreshore of a natural waterbody will be made available for public access as a result of the development but is not in public ownership—public access to and use of the land will be safeguarded.	No new points of public access are proposed for Area 2 or Area 3.

4.1.2 Local Environmental Plans

The proposed modification is contained within the Campbelltown City Council Local Government Area (LGA). The discussion of the Campbelltown Local Environmental Plan 2015 in Section 4.1.2 of the project REF remains applicable to the proposed modification.

4.2 Other relevant NSW legislation

4.2.1 National Parks and Wildlife Act 1974

The *National Parkes and Wildlife Act 1974* (NPW Act) is the primary legislation dealing with Aboriginal cultural heritage in NSW. Items of Aboriginal cultural heritage (Aboriginal objects) or Aboriginal places (declared under Section 84) are protected and regulated under the NPW Act. Aboriginal objects are protected under section 86 of the NPW Act. Under section 90(1) of the NPW Act, the Secretary of the Department of Premier and Cabinet may issue an Aboriginal Heritage Impact Permit (AHIP) for an activity which would harm an Aboriginal object.

An Aboriginal Cultural Heritage Assessment Report (CHAR) was prepared for the approved project in accordance with the Procedure for Aboriginal Cultural Heritage Consultation and Investigation (PACHCI) (Road and Maritime Services, 2011) as described in Section 6.3 of Addendum REF No.1. AHIPs have been previously obtained for the approved project.

The proposed modification would not result in any additional impacts to identified Aboriginal heritage sites or objects and no additional AHIPs would be required.

4.2.2 Heritage Act 1977

The *Heritage Act 1977* (Heritage Act) aims to protect items of State and local heritage significance and outlines the process for the approval of development that may impact on items of heritage significance.

Matters protected under the Heritage Act include items subject to an Interim Heritage Order and items listed on the State Heritage Register, the heritage schedules of local council Local Environmental Plans (LEPs), and the heritage and conservation registers established under section 170 of the Heritage Act by NSW Government agencies (section 170 Registers). The Heritage Act also provides for the protection of archaeological 'relics', being any deposit, object or material evidence that relates to the non-Aboriginal settlement of NSW and is of State or local heritage significance. Under section 57(1), approvals are required for work to a place, building, work, relic, moveable object, precinct, or land listed on the State Heritage Register. An excavation permit under section 139 of the Heritage Act is required to disturb or excavate any land containing or likely to contain a relic.

A Statement of Heritage Impact Assessment (SOHI) was prepared for the project REF and REF Addendum No.1. The proposed modification would not result in any changes to the non-Aboriginal heritage impacts described for the approved project.

4.2.3 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) seeks to conserve biological diversity and promote Ecologically Sustainable Development (ESD); 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* (FM Act), are assessed using a five-part test. Where a significant impact is likely to occur, a Species Impact Statement or Biodiversity Development Assessment Report must be prepared in accordance with the Director-General's requirements.

The biodiversity assessment concluded that a significant impact to a threatened species, population or community would be unlikely (refer to Section 6.1 and Appendix C).

4.2.4 Protection of the Environment Operations Act 1994

The *Protection of the Environment Operations Act 1997* (POEO Act) provides for the issue of an Environment Protection Licence (EPL) for scheduled activities.

The construction contractor (Georgiou Group Pty Ltd) holds an EPL for the project (No. 21673). The EPL premises boundary would be modified as required to reflect changes to the new project boundary.

4.2.5 Coal Mine Subsidence Compensation Act 2017

The *Coal Mine Subsidence Compensation Act 2017* (CMSC Act) makes provision for the payment of compensation for damage caused by subsidence arising from coal mining. The CMSC Act also includes conditions relating to the approval of development within mine subsidence districts, and functions and powers of the Subsidence Advisory NSW (previously the Mine Subsidence Board). Part 3 of the CMSC Act outlines the conditions and approvals required for development within mine subsidence districts.

The proposed modification is located within the South Campbelltown Mine Subsidence District. Approval under section 22 of the CMSC Act was granted for the project, subject to conditions detailed in Section 6.13.2 of the project REF. No further approval is required for the proposed modification.

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 this 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 in Section 6.1 of this addendum REF and Appendix A.

Findings – matters of national environmental significance (other than biodiversity matters)

The assessment of the proposed modification's impact on matters of national environmental significance and the environment of Commonwealth land found that there would be no change to the findings of the determined

activity and would be unlikely to cause a significant impact on matters of national environmental significance or the environment of Commonwealth land. A referral to the Australian Department of Climate Change, Energy, the Environment and Water is not required.

4.4 Confirmation of statutory position

The proposed modification is categorised as development for the purpose of a road as well as upgrade of existing road infrastructure and is being carried out by or on behalf of a public authority. Under section 2.109 of SEPP (Transport and Infrastructure) 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.

Transport is the determining authority for the proposed modification. This addendum REF fulfils Transport's obligation under section 5.5 of the EP&A Act to examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the activity.

5. Consultation

5.1 Consultation strategy

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

5.2 Consultation outcomes

Community and stakeholder consultation for the project is documented in Chapter 5 of the project REF, in the submissions report and in subsequent addendum REFs.

Consultation under SEPP (Transport and Infrastructure) was carried out during 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, although Council would be notified of the proposed changes. Approval conditions from Subsidence Advisory NSW as outlined in Table 5-3 of the project REF are reflected in the consolidated safeguards in Section 7.2 of this addendum REF.

The State Emergency Service (SES) was consulted during the preparation of the project REF. Given the minimal changes to the project boundary, further consultation with SES is not considered necessary.

5.3 Ongoing or future consultation

Ongoing consultation would be consistent with Section 5.4 of the project REF and as outlined in the submissions report.

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 Spring Farm Parkway Stage 1. All aspects of the environment potentially impacted upon by the proposed modification are considered. This includes consideration of Guidelines for Division 5.1 assessments (Department of Planning and Environment, 2022) and the factors specified in section 171 of the Environmental Planning and Assessment Regulation 2021. The factors specified in section 171(2) of the Environmental Planning and Assessment Regulation 2021 are also considered in Appendix A.

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

6.1 Biodiversity

Potential impacts to biodiversity as a result of the proposed modification are assessed in the Biodiversity Memorandum prepared by East Coast Ecology in August 2024 (refer to Appendix C). A summary of the assessment is presented below.

6.1.1 Methodology

The methodology for the biodiversity assessment included:

- A review of background information and previous biodiversity assessments, including:
  - The project REF and subsequent addendums
  - Spring Farm Parkway Stage 1 Biodiversity Assessment Report (Niche Environment and Heritage, 2019)
  - Spring Farm Parkway Stage 1 Ecology Assessment Addendum REF (Niche Environment and Heritage, 2021)
  - Spring Farm Parkway Stage 1 Ecology Assessment Third Addendum REF (Niche Environment and Heritage, 2022).
- A field survey carried out on 27 August 2024 to:
  - Verify existing vegetation mapping
  - Traverse the proposed modification areas and immediate surrounds for suitable habitat for threatened species, including for hollow-bearing trees and stick nests, coarse woody debris, thick leaf litter, crevices, culverts and bridges, burrows, and bushrock
  - Identify areas of potential foraging habitat for threatened fauna
  - Identify areas of weed infestation
  - Estimate the number of trees that would require removal
  - Qualitatively assess the condition of the vegetation.
- Desktop searches of the Department of Climate Change, Energy, the Environment and Water's online Protected Matters Search Tool.

6.1.2 Existing environment

Vegetation mapping

Vegetation within the approved project boundary has been mapped as part of previous biodiversity assessments. The Plant Community Types (PCTs) mapped as occurring within the approved project boundary are identified in Table 6-1.

Table 6-1: Plant Community Types recorded in the direct impact area

Plant Community Type	Vegetation zone	Condition	Threatened Ecological Community	BC Act	EPBC Act
850 – Grey Box – Forest Red Gum grassy woodland on shale of the southern Cumberland Plain, Sydney Basin Bioregion	Low_DNG	Low condition Derived Native Grassland	Cumberland Plain Woodland in the Sydney Basin Bioregion	Critically Endangered	-
	Low_Grass	Low condition woodland, with grassy understorey	Cumberland Plain Woodland in the Sydney Basin Bioregion	Critically Endangered	-
	Low_Olive	Low condition woodland dominated by African Olive	Cumberland Plain Woodland in the Sydney Basin Bioregion	Critically Endangered	-
	Moderate_Bursaria	Moderate condition woodland with native shrub layer	Cumberland Plain Woodland in the Sydney Basin Bioregion	Critically Endangered	Critically Endangered
	Moderate_DNG	Moderate condition Derived Native Grassland	Cumberland Plain Woodland in the Sydney Basin Bioregion	Critically Endangered	-
1800 – Swamp Oak open forest on riverflats of the Cumberland Plain and Hunter Valley	Low	Low condition forest	Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin and South East Corner bioregions	Endangered	Endangered
Exotic / planted	Exotic – Olive	-	-	-	-
	Exotic Grassland	-	-	-	-
	Planted Vegetation	-	-	-	-

Cumberland Plain Woodland

Portions of the timbered areas within the project boundary have been mapped as PCT 850 – *Grey Box - Forest Red Gum grassy woodland on shale of the southern Cumberland Plain, Sydney Basin Bioregion* in varying conditions. PCT 850 aligns to the BC Act listing of the critically endangered ecological community (CEEC) Cumberland Plain Woodland in the Sydney Basin Bioregion (CPW). Given the highly degraded nature of the vegetation, only a small portion of PCT 850 aligns to the EPBC Act listing of the TEC, that being the 'Moderate_Bursaria' vegetation zone.

African Olive is the main problematic weed in the project boundary, occurring as a dense thicket in PCT 850

'Low_Olive' vegetation zone. African Olive is known to adversely impact the establishment and growth of native grasses and herbs, understorey trees, and overstorey trees such as Eucalypts. Native tussock grasses are particularly affected. The condition of the vegetation is likely to further degrade with time as the current African Olive infestation spreads, and these areas need significant weed management to prevent further decline in condition.

Swamp Oak Floodplain Forest

The vegetation along the waterway in the south of the project area was mapped as PCT 1800. PCT 1800 aligns to the BC Act listing of the Endangered Ecological Community (EEC) *Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin and South East Corner bioregions* (SOFF) and the EPBC Act listing, *Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community*.

Grasslands

Native grass species previously recorded within the project boundary include:

- *Microlaena stipoides* (Weeping Meadow Grass)
- *Bothriochloa macra* (Red-leg Grass)
- *Themeda australis* (Kangaroo Grass).

Exotic species recorded within the project boundary include:

- *Chloris gayana* (Rhodes Grass)
- *Eragrostis curvula* (African lovegrass)
- *Senecio madagascariensis* (Fireweed)
- *Plantago lanceolata* (Lamb's Tongues).

The derived native grassland (DNG) within the project boundary is derived from the surrounding woodland, which is mapped as PCT 850 – *Grey Box - Forest Red Gum grassy woodland on shale of the southern Cumberland Plain*, Sydney Basin Bioregion. Derived native grassland of PCT 850 aligns to the CEEC CPW listed under the BC Act. However, DNG does not align to the EPBC Act listing of this community.

The native component of this vegetation zone consists of disturbance tolerant grasses and forbs commonly occurring within disturbed paddocks, with no evidence of regeneration of a native canopy or shrub layer. These areas are considered to provide limited value to the conservation of the local occurrence of CPW.

Further, to provide some context in relation to the Biodiversity Offset Scheme (BOS) under the BC Act, the condition and conservation value of PCT 850 'Low_DNG' would not be required to be offset under the Biodiversity Offset Methodology.

Threatened flora

Given the very small amount of degraded woodland and riparian forest present in the direct impact area, previous investigations considered two threatened flora species / populations to have a moderate or higher potential to occur. These include:

- *Marsdenia viridiflora subsp. viridiflora* (Native Pear), listed as an Endangered Population under the BC Act, and
- *Pimelea spicata* (Spiked Rice-flower), listed as Endangered under the BC and EPBC Act.

As potential habitat for these species / populations was deemed likely, a threatened flora survey targeting both species was carried out as part of the Spring Farm Parkway Stage 1 Biodiversity Assessment Report (Niche Environment and Heritage, 2019).

Marsdenia viridiflora subsp. viridiflora is a conspicuous species and would likely have been recorded during the field survey if the species was present. The species is therefore unlikely to be present within the direct impact area despite having some marginal habitat. The likelihood of impact to the endangered population of *Marsdenia viridiflora subsp. viridiflora* is low, and therefore no further assessment is required.

Pimelea spicata was previously recorded near the project boundary during field investigations in 2019, however the species was not recorded in the direct impact area. It was also not recorded during the subsequent field investigations. *Pimelea spicata* is however known to occur within degraded habitat that once supported CPW

(Department of Environment and Conservation, 2006). This species was considered for further assessment in Addendum REF No. 2.

A review of updated threatened flora spatial records from the Department of Climate Change, Energy, the Environment and Water's online Protected Matters Search Tool was carried out in 2024 as part of the biodiversity assessment for the proposed modification. The search returned three additional species to the initial search carried out as part of the Spring Farm Parkway Stage 1 Biodiversity Assessment Report (Niche Environment and Heritage, 2019). These species included:

- *Epacris purpurascens var. purpurascens*, which is listed as Vulnerable under the BC Act
- *Eucalyptus nicholii* (Narrow-leaved Black Peppermint), which is listed as Vulnerable under the BC Act and EPBC Act
- *Eucalyptus sp. Cattai*, which is listed as Critically Endangered under the BC Act and EPBC Act.

The likelihood of occurrence of these additional threatened species was assessed. It was determined that each species had a 'low' likelihood of occurrence within the proposed modification areas. No other threatened flora species were considered likely to occur within these areas.

Threatened fauna

No threatened fauna were observed during previous surveys carried out in 2021 or 2022. However, five threatened species were recorded during the surveys carried out in 2019 (Niche Environment and Heritage, 2019), including Little Lorikeet (*Glossopsitta pusilla*), Little Eagle (*Hieraaetus morphnoides*), Grey-headed Flying-fox (*Pteropus poliocephalus*), Eastern Freetail-bat (*Micronomus norfolkensis*) and Greater Broad-nosed Bat (*Scoteanax rueppellii*).

A total of 53 hollow-bearing trees have previously been recorded within the project boundary (Niche Environment and Heritage, 2019) (Niche Environment and Heritage, 2021). Of the 53, the project would remove 21 hollow bearing trees (eight of which are stags).

A review of updated threatened fauna spatial records from the Department of Climate Change, Energy, the Environment and Water's online Protected Matters Search Tool was carried out in 2024 as part of the biodiversity assessment for the proposed modification. The search returned one additional species to the initial search carried out in 2019 (Niche Environment and Heritage, 2019), including the Pilotbird (*Pycnoptilus floccosus*), which is listed as Vulnerable under the BC Act and EPBC Act.

The likelihood of occurrence of this additional threatened species was assessed. It was determined that the species was 'unlikely' to occur within the proposed modification areas. Targeted surveys for *Meridolum corneovirens* (Cumberland Plain Land Snail) within Area 2 and Area 3 did not identify this species. No other threatened fauna species were considered likely to occur within the proposed modification areas.

No threatened species were detected during the field survey carried out as part of the proposed modification in August 2024. Area 2 provided potential, low-quality foraging habitat for highly mobile threatened fauna in the form of a flowering eucalypt and exotic African Olives. Wet areas within and adjacent to the proposed modification areas could provide habitat for protected frogs. No areas of dense leaf litter were recorded, and no hollow-bearing trees were identified within the proposed modification areas.

Vegetation condition

Native vegetation within the proposed modification areas was determined to be consistent with the three vegetation zones (and threatened ecological community) identified in Addendum REF No. 3. These are outlined in Table 6-2.

Table 6-2: Vegetation condition of Area 1, Area 2 and Area 3

Location	Plant Community Type / vegetation zone	Area (m^2)
Area 1	Exotic grassland	4,760
	PCT 850: Low_DNG	1,419
Area 2	PCT 850: Low_Olive	384
Area 3	PCT 850: Low_DNG	350

Vegetation within Area 1 could not be accessed during the August 2024 field survey so existing vegetation mapping (previously prepared for the approved project) was used. The condition of the vegetation within the surveyed areas was determined to be low and does not meet the condition threshold for listing as the EPBC Act community Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest (Department of the Environment, Water, Heritage and the Arts, 2009).

6.1.3 Potential impacts

Construction

The proposed modification would result in some changes to the amount of vegetation to be impacted as a result of the project (refer to Table 6-3). This would include a reduction to the overall impact area for the Cumberland Plain Woodland (low condition Derived Native Grassland) from 8.29 hectares to 8.18 hectares, and an increase to the overall impact area for the Cumberland Plain Woodland (low condition woodland dominated by African Olive) from 3.61 hectares to 3.65 hectares.

Table 6-3: Changes to vegetation to be impacted as a result of the project (inclusive of the proposed modification)

Plant Community Type / Vegetation zone	Project REF and Addendum REF No. 3 (cumulative) (ha)	Proposed modification		Total (ha)
		Remove (m^2)	Retain (m^2)	
PCT 850: Low_DNG	8.29	350	1,419	8.18
PCT 850: Low_Olive	3.61	384	0	3.65

Potential impacts to threatened biodiversity within the direct impact area have been assessed against the Commonwealth and NSW statutory framework (refer to Appendix C). The biodiversity assessment concluded that a significant impact to a threatened species, population or community is unlikely. No additional offsets to those described in the Addendum REF No. 3 would be required for the proposed modification.

Operation

The operational impacts of the proposed modification are consistent with the impacts outlined in Section 6.7.3 of the project REF.

Conclusion on significance of impacts

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 is not required.

The 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

The safeguards and management measures identified in the submissions report and subsequent addendum REFs are considered adequate to address the biodiversity impacts of the proposed modification. A consolidated list of proposed safeguards and management measures are provided in Section 7.2.

6.1.5 Biodiversity offsets

As described in Addendum REF No. 3, PCT 850: Low_DNG and PCT 850: Low_Olive are both considered to be in low condition and do not require offsetting. Cumberland Plain Land Snail was not detected during targeted surveys and is not considered for offsetting.

6.2 Other impacts

6.2.1 Existing environment and potential impacts

Environmental factors with negligible to minor impacts are assessed in Table 6-1.

Table 6-4: Existing environment and potential impacts – other impacts

Environmental factor	Existing environment	Potential impacts
Traffic and transport	Refer to Section 6.1.2 of the project REF, and subsequent addendums.	The proposed modification would not result in a substantive change to traffic and transport as identified in the project REF and subsequent addendums. Vehicles would access Area 2 and Area 3 would be consistent with the project Traffic Management Plan (which has been revised since the opening of the project to traffic on 29 August 2024). Safeguards TT1 to TT8 are considered adequate to address potential impacts. No additional measures are proposed.
Noise and vibration	Refer to Section 6.2.2 of the project REF, and subsequent addendums.	The proposed modification would not result in any substantive changes to noise and vibration as identified in the project REF and subsequent addendums. Safeguards NV1 to NV8 and ANV9 to ANV11 are considered adequate to address potential impacts. No additional measures are proposed.
Landscape character and visual amenity	Refer to Section 6.3.2 of the project REF, and subsequent addendums.	The proposed modification would involve some impacts to landscape character and visual amenity, including the presence of additional construction plant and equipment at Area 2 and Area 3, and vegetation removal and excavation at Area 3. These impacts would generally be consistent with those described in Section 6.3.4 of the project REF and subsequent addendums. As the site is currently under construction as part of the approved project, landscape character and visual amenity impacts as a result of the proposed modification are expected to be minor. Safeguards LV1 to LV6 are considered adequate to address the potential impacts. No additional measures are proposed.
Surface water	Refer to Section 6.4.2 of the project REF, and subsequent addendums.	The proposed modification would include stormwater lining works at Area 2 and the removal of sediment at Area 3. This has the potential to result in impacts to water quality due to erosion and sedimentation from vegetation removal, excavation and other construction activities, if appropriate safeguards and management measures are not implemented. Potential impacts to water quality as a result of the proposed modification would be consistent with those previously identified for the approved project in Section 6.4.3 of the project REF.

Environmental factor	Existing environment	Potential impacts
		Safeguards SW1 to SW2 are considered adequate to address the potential impacts. No additional measures are proposed.
Hydrology and flooding	Refer to Section 6.5.2 of the project REF, and subsequent addendums.	The proposed modification would include the removal and maintenance of existing vegetation and sediment in the unnamed drainage line. This would assist in removing obstructions and improve the functioning of the stormwater system for the surrounding catchment, including at Menangle Road. The potential impact from this additional work would not result in a substantive impact on hydrology and would not alter flood impacts as identified in Section 6.5.3 of the project REF. Safeguards AF1 to AF2 are considered adequate to address the potential impacts, noting that these were added as part of Addendum REF No.1, following advice from the State Emergency Service. No additional measures are proposed.
Soils and contamination	Refer to Section 6.6.2 of the project REF, and subsequent addendums.	The proposed modification would result in a minor disturbance of soils at Area 2 and Area 3 due to construction activities. The potential impacts of the proposed modification would be consistent with those described in Section 6.6.3 of the project REF and would include the potential for erosion of exposed surfaces from vegetation removal, excavation and other construction activities. The proposed modification would also decrease the direct impact boundary of the project, as a result of the removal of Area 1 (which would no longer be required for use as a construction access route). This would reduce the project's impact on soils and contamination as described in the project REF and addendums. The proposed modification would not result in long-term impacts on soils and contamination. Any exposed surfaces at Area 2 and Area 3 would be stabilised with landscaping. Safeguards SW1 to SW2 and C1 to AC3 are considered adequate to address potential impacts. No additional measures are proposed.
Aboriginal cultural heritage	Refer to Section 6.8.2 of the project REF, and subsequent addendums.	The potential impacts of the proposed modification would be consistent with those described in Section 6.8.3 of the project REF and subsequent addendums. Most elements of the proposed modification are located within the area to which Aboriginal Heritage Impact Permit (AHIP) 4894 applies, however a small portion of Area 3 is located outside AHIP 4894 (refer to Figure 6-1). A search of the NSW Government's Aboriginal Heritage Impact Management System (AHIMS) was carried out on 12 September 2024. The search identified one recorded site to the east of the Hume Motorway (refer to Appendix D). This site is located about 80 metres from Area 3 and is mapped on Figure 6-7 of Addendum REF No. 1..

Environmental factor	Existing environment	Potential impacts
		Safeguards ABH1 to AABH6 are considered adequate to address potential impacts. No additional measures are proposed.
Non-Aboriginal heritage	Refer to Section 6.9.2 of the project REF.	Potential impacts would be consistent with those described in Section 6.9.3 of the project REF and subsequent addendum REFs. The proposed modification would not result in impacts to non-Aboriginal heritage items or areas of archaeological potential. Safeguards HH1 to HH3 are adequate to address potential impacts. No additional measures are proposed.
Socio-economic	Refer to Section 6.10.2 of the project REF.	Potential impacts as a result of the proposed modification would be consistent with those described in Section 6.10.3 of the project REF and subsequent addendum REFs. The proposed modification would not have adverse property or social infrastructure impacts. Safeguards SEC1 to ASEC7 are adequate to address potential impacts. No additional measures are proposed.
Air quality	Refer to 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 and subsequent addendum REFs, and would include minor emissions from vehicles, plant machinery and dust during construction. Safeguard AQ1 is considered adequate to address potential impacts. No additional measures are proposed.
Waste and resource management	Refer to Section 6.12.2 of the project REF.	The potential impacts of the proposed modification would be consistent with those described in Section 6.12.2 of the project REF and subsequent addendum REFs. Additional waste quantities, such as vegetative waste or surplus spoil, would be small in the context of the project and no additional waste streams have been identified. Safeguards WAS1 to WAS3 are considered adequate to address potential impacts. No additional measures are proposed.
Other environmental factors	Refer to Section 6.13.2 of the project REF for consideration of other impacts such as groundwater, climate change and greenhouse gas emissions, and hazards and risks.	No changes to the potential impacts on groundwater, climate change and greenhouse gas emissions and, hazards and risk described in the project REF are expected as a result of the proposed modification.

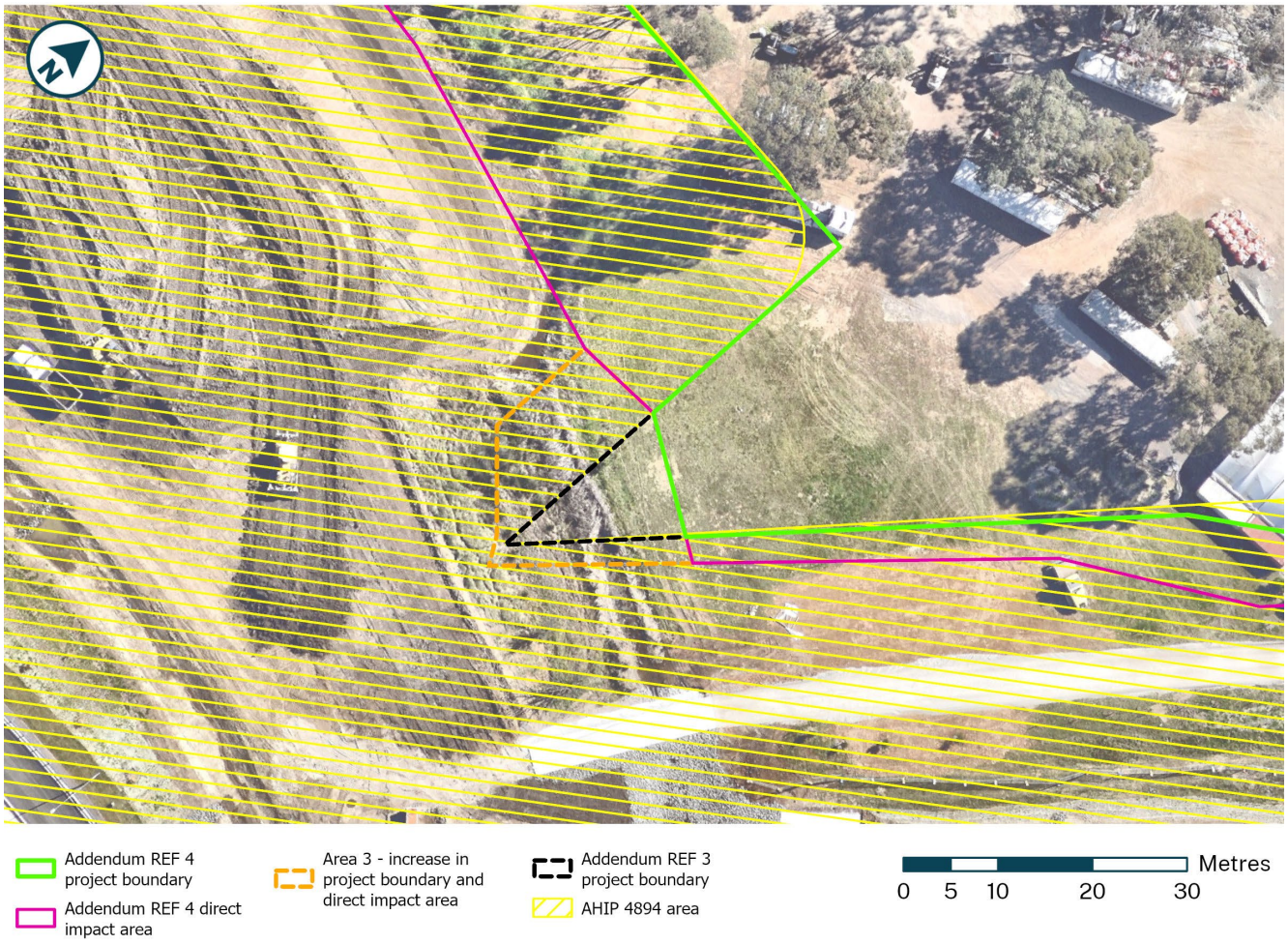

Figure 6-1: Location of the proposed modification

6.2.2 Safeguards and management measures

Existing safeguards are considered adequate to address the impacts identified in Section 6.2.1.

6.3 Cumulative impacts

6.3.1 Potential impacts

Cumulative impacts may be caused by both construction and operational activities and can result in a greater impact to the surrounding area than would be expected if each project was carried out in isolation.

The projects outlined in Section 6.14.2 of the project REF, as well as those discussed in subsequent addendums, would potentially result in cumulative impacts with the project (inclusive of the proposed modification). Notwithstanding, the potential for cumulative impacts is considered consistent with that assessed for the approved project.

Substantive cumulative impacts associated with the proposed modification are not expected, given the limited scope of the changes and the minimal incremental impacts identified. Minimising impacts of the proposed modification is the best way to address any potential cumulative effects.

The project (inclusive of the proposed modification) would cater for the future traffic growth expected from nearby developments and would supplement improvement works to the adjoining road network that are also being carried out by Transport. Cumulatively, all projects considered would provide opportunities for future economic growth for the Menangle Park area.

6.3.2 Safeguards and management measures

Safeguards and management measures that would address potential cumulative impacts associated with the approved project and proposed modification are identified in Table 7-1.

7. Environmental management

7.1 Environmental management plans

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 Construction Environmental Management Plan (CEMP) and applied during the construction and operation of the proposed modification.

7.2 Summary of environmental safeguards and management measures

Environmental safeguards and management measures for the Spring Farm Parkway as amended, are summarised in Table 7-1. No additional safeguards and management measures were identified in this addendum REF, however some measures have been amended to reflect changes to reference documents (shown in **bold** and *italics*). These safeguards and management measures will minimise any potential adverse impacts arising from the proposed modification on the surrounding environment.

Table 7-1: Summary of safeguards and management measures

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
General safeguards					
GEN1	General – minimise environmental impacts during construction	A CEMP will be prepared and submitted for review and endorsement of the Transport for NSW Environment Manager prior to commencement of the activity. As a minimum, the CEMP will address the following: • Any requirements associated with statutory approvals • Details of how the project will implement the identified safeguards outlined in the REF and subsequent addendum REFs • Issue-specific environmental management plans • Roles and responsibilities • Communication requirements • Induction and training requirements • Procedures for monitoring and evaluating environmental performance, and for corrective action • Reporting requirements and record-keeping • Procedures for emergency and incident management • Procedures for audit and review. The endorsed CEMP will be implemented during the undertaking of the activity.	Contractor / Transport for NSW project manager	Detailed design / Pre-construction	Project REF
GEN2	General – notification	All business, residential properties and other key stakeholders (e.g. schools, local councils) affected by the activity will be notified at least five days prior to commencement of the activity.	Contractor / Transport for NSW project manager	Pre-construction	Project REF
GEN3	General – environmental awareness	All personnel working on site will receive training to ensure awareness of environment protection requirements to be	Contractor / Transport for NSW project manager	Detailed design / pre-construction	Project REF

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
		implemented during the proposal. This will include up-front site induction and regular "toolbox" style briefings. Site-specific training will be provided to personnel engaged in activities or areas of higher risk. These include: • Areas of Aboriginal heritage sensitivity, especially around Compound 2 • Areas of non-Aboriginal sensitivity (Sugarloaf Farm, Glenlee and Grazier's Arms Inn) • Threatened species habitat on the western side of Hume Motorway • Noise management measures in relation to surrounding receivers including Broughton Anglican College.			
Traffic and transport					
TT1	Traffic and transport	A Traffic Management Plan (TMP) would be prepared and implemented as part of the CEMP. The TMP would be prepared in accordance with the ***Traffic control at work sites Technical Manual* (*Transport for NSW 2022.*** ~~Roads and Maritime Traffic Control at Work Sites Manual (RTA, 2010)~~ and QA Specification G10 Control of Traffic ~~(Roads and Maritime, 2008)~~. The TMP would include: • Confirmation of haulage routes • Measures to maintain access to local roads and properties • Site specific traffic control measures (including signage) to manage and regulate traffic movement • Measures to maintain pedestrian and cyclist access • Requirements and methods to consult and inform the local community of impact on the local road network • Access to construction sites including entry and exit locations and measures to prevent construction vehicles queuing on public roads • A response plan for any construction traffic incident • Consideration of other developments that may be under construction to minimise traffic conflict and congestion that may occur due to the cumulative increase in construction vehicle traffic • Monitoring, review and amendment mechanisms.	Contractor	Detailed design / pre-construction	Project REF

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
TT2	Road damage	Undertake a pre-construction dilapidation survey of local roads used for construction. Defects caused by construction activities would be rectified prior to completion of construction.	Contractor	Construction	Project REF
TT3	Property access	Access to properties along Menangle Road would be maintained during construction. The need for any alternative and/or temporary access arrangements would be agreed with affected property managers/owners.	Contractor	Construction	Project REF
TT4	Broughton Anglican School access	Access to Broughton Anglican School would be maintained during construction. The need for any alternative and/or temporary access arrangements would be agreed with affected property managers/owners.	Contractor	Construction	Project REF
TT5	Traffic and transport – bus services	Interaction between commuters accessing Menangle Park Station across Racecourse Avenue, and construction traffic would be managed to ensure safety for road users as part of the construction traffic management plan.	Contractor	Construction	Project REF
TT6	Traffic and transport – bus services	The final location of temporary bus stops would be confirmed based on consultation with the bus route operator (Picton Buslines).	Contractor	Construction	Project REF
TT7	Traffic and transport – cycling facilities	Alternative routes would be identified as part of the construction traffic management plan which may require closure of the motorway to cyclists between Picton Road and Narellan Road.	Contractor	Construction	Project REF
TT8	Construction traffic	In relation to the proposed modification, the TMP would include: The temporary upgrade of the intersection at Menangle Road/Glenlee Road during construction in order to safely accommodate construction heavy vehicle movement.	Contractor	Construction	Project REF – Addendum REF No. 1
Noise and vibration					
NV1	Noise and vibration	A Construction Noise and Vibration Management Plan (CNVMP) would be prepared and implemented as part of the CEMP. The CNVMP would generally follow the approach in the Interim Construction Noise Guideline (ICNG) (Department of Environment and Climate Change, 2009) and identify: • All potentially significant noise and vibration generating activities associated with the facility • Feasible and reasonable mitigation measures to be implemented, taking into account Beyond the pavement: Urban design approach and procedures for road and maritime	Contractor	Detailed design / pre-construction	Project REF

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
		infrastructure planning, design and construction (Transport for NSW, 2020) • A monitoring program to assess performance against relevant noise and vibration criteria • Arrangements for consulting with affected neighbours and sensitive receivers, including notification and complaint handling procedures • Contingency measures to be implemented in the event of non-compliance with noise and vibration criteria.			
NV2	Noise and vibration	Viable mitigation measures that would be expected to be deployed by the construction contractor once the final construction sequencing and scheduling is known include: • Restricting work to standard construction hours as far as practicable, considering safety and traffic management requirements • Selecting quieter plant and equipment • Erecting temporary acoustic hoarding to reduce noise from work within a confined area • Deploying mobile hoardings (e.g. acoustic screen curtains mounted on a wheeled trailer) to track moving, but tightly-contained processes • Maximising offset distances between receivers and noisy plant or other activities • Orienting plant and processes away from residences where reasonably practicable • Scheduling work for times outside of heightened sensitivity for the impacted receiver (e.g. outside of school hours) • Scheduling respite periods for noise-sensitive processes undertaken near receivers (e.g. limiting operation of pavement sawing to three hours at a time) • Planning any out-of-hours work (OOHW) so that noisier work is carried out in the earlier part of the evening or night-time • Minimising the number of consecutive nights of work adjacent to any particular set of receivers	Contractor	Construction	Project REF

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
		• Restricting heavy vehicle movements, heavy deliveries and loading and unloading processes to daytime periods and to areas away from receivers • Regularly maintaining and monitoring plant and equipment to ensure that their noise emissions are not excessive • Minimising the annoyance from reversing alarms by either fitting closed circuit monitors or non-tonal reversing alarms ("quackers") on vehicles or deploying 'spotters' to oversee reversing movements • Reducing throttle settings and switching off equipment when it is not being used.			
NV3	Noise and vibration	All sensitive receivers (e.g. schools, local residents) likely to be affected would be notified at least 5 days prior to commencement of any work associated with the activity that may have an adverse noise or vibration impact. The notification would provide details: • The project • The construction period and construction hours • Contact information for project management staff • Complaint and incident reporting • How to obtain further information.	Contractor	Detailed design / pre-construction	Project REF
NV4	Construction noise	Consider respite periods and verification for receiver identified as being eligible for additional mitigation in accordance with the Construction Noise Vibration Guideline ***(Roads)*** (Transport for NSW, ~~2016b~~***2023***).	Contractor	Construction	Project REF
NV5	Construction traffic	Schedule construction of the Hume Motorway deceleration late and northbound access ramp as early as practicable to limit construction traffic impacts to residents of Menangle Park.	Contractor	Pre-construction / construction	Project REF
NV6	Construction vibration	Where vibration intensive plant such as vibratory rollers, rock hammers or bored piling rigs are used, vibration must be managed to minimise disturbance to building occupants and to avoid damage to buildings and other structures. Specific measures to manage to potential for vibration impacts would be determined as part of the CNVMP developed at the	Contractor	Pre-construction / construction	Project REF

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
		detailed design stage once the specific equipment schedule and localized geotechnical conditions are known.			
NV7	Construction vibration	CNVMP should consider implementing the following measures to limit construction vibration levels: • Use lower vibration generating items of excavation plant and equipment, such as smaller capacity rockbreakers or concrete crushers/pulverisers in place of rockbreakers, where feasible • Suitably program the hours of operation of major vibration generating plant and equipment • Minimise consecutive work in the same locality • Use dampened rockbreakers and/or 'city' rockbreakers • Undertake attended vibration monitoring where vibration-intensive work is required to be undertaken within the safe working distances • Complete building condition surveys before and after vibration-intensive work to identify existing damage and any damage due to the works.	Contractor	Pre-construction	Project REF
NV8	Operational noise – at property treatment	Determine the specific form of acoustic building treatment required to meet the necessary noise reductions of internal noise levels at least 10 dB(A) below external noise goals, with regard for the existing construction of the building, and in consultation with the landowner.	Transport for NSW	Pre-construction	Project REF
ANV9	Vibration impact on Upper Canal (Pheasants Nest Weir to Prospect Reservoir) (SHR 01373)	When vibration intensive works are to take place near the Upper Canal heritage item, a certified engineer should inspect the structure for visual damage prior to and during the works taking place.	Transport for NSW	Pre-construction / construction	Project REF – Addendum No.1
ANV10	Vibration impact on Upper Canal (Pheasants Nest Weir to Prospect Reservoir) (SHR 01373)	If new visual impacts are identified as a result of the works by a certified engineer, works would be stopped and reviewed. Any new visual impacts should then be suitably repaired.	Transport for **NSW** ~~New South Wales~~ / Contractor	Pre-construction / construction	Project REF – Addendum No.1
ANV11	Vibration impact on Upper Canal (Pheasants Nest Weir to Prospect Reservoir) (SHR 01373)	A vibration monitoring device should be installed and operated by a suitably qualified specialist for the duration of the vibration intense works.	Transport for NSW / Contractor	Pre-construction / construction	Project REF – Addendum No.1

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
		Where vibration reaches levels which may result in damage to the structure, works should be ceased and revised to minimise vibration impacts.			
Landscape character and visual impact					
LV1	Landscape character and visual impact	An Urban Design Plan will be prepared to support the final detailed proposal design and implemented as part of the CEMP. The Urban Design Plan will present an integrated urban design for the proposal, providing practical detail on the application of design principles and objectives identified in the environmental assessment. The Plan will include design treatments for: • Location and identification of existing vegetation and proposed landscaped areas, including species to be used • Built elements including retaining walls, bridges and noise walls • Pedestrian and cyclist elements including footpath location, paving types and pedestrian crossings • Fixtures such as seating, lighting, fencing and signs • Details of the staging of landscape work taking account of related environmental controls such as erosion and sedimentation controls and drainage • Procedures for monitoring and maintaining landscaped or rehabilitated areas. The Urban Design Plan will be prepared in accordance with relevant guidelines, including: • Beyond the pavement: Urban design approach and procedures for road and maritime infrastructure planning, design and construction (Transport for NSW, 2020) • Landscape Design Guideline ~~(Roads and Maritime Services, 2018)~~ ***(Transport for NSW, 2023)*** • Bridge Aesthetics (Transport for NSW, 2019) • Noise Wall Design Guidelines (Transport for NSW, 2021) • ***Shotcrete design guideline (Transport for NSW, 2023)*** ~~Shotcrete Design Guidelines (Roads and Maritime Services, 2016c)~~	Contractor	Detailed design / pre-construction	Project REF

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
LV2	Visual impact as a result of vegetation loss	Minimise footprint and disruption to creek lines and retain vegetation beyond the footprint in order to retain any existing screening.	Contractor	Construction	Project REF
LV3	Visual impact as a result of vegetation loss	Stabilise/revegetate as work progresses to limit erosion and visual impact through early integration with surrounding vegetation.	Contractor	Consultation	Project REF
LV4	Lighting impact	The design of temporary lighting must avoid unnecessary light spill on adjacent residents or sensitive receivers and be designed in accordance with AS 1158.1-1986.	Contractor	Construction	Project REF
LV5	Visual impact from construction sites	Set out compounds to limit impact. Consider screening and the location of key structures which provide the greatest visual impact.	Contractor	Construction	Project REF
LV6	Visual impact from construction sites	Maintain compound in a tidy and well-presented manner. Provide and maintain screening.	Contractor	Construction	Project REF
Soils and water					
SW1	Soil and water	A Soil and Water Management Plan (SWMP) will be prepared and implemented as part of the CEMP. The SWMP will identify all reasonably foreseeable risks relating to soil erosion and water pollution and describe how these risks will be addressed during construction.	Contractor	Detailed design / pre-construction	Project REF
SW2	Soil and water	A site-specific Erosion and Sediment Control Plan/s will be prepared and implemented as part of the SWMP. The Soil and Sediment Control Plan will include arrangements for managing wet weather events, including monitoring of potential high risk events (such as storms) and specific controls and follow-up measures to be applied in the event of wet weather.	Contractor	Detailed design / pre-construction	Project REF
Non-Aboriginal heritage					
HH1	Non-Aboriginal Heritage	A Non-Aboriginal Heritage Management Plan (NAHMP) will be prepared and implemented as part of the CEMP. It will provide specific guidance on measures and controls to be implemented to avoid and mitigate impact to Non-Aboriginal heritage.	Contractor	Detailed design / pre-construction	Project REF

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
HH2	Non-Aboriginal heritage – unexpected finds	The **Unexpected heritage items procedure** ~~Standard Management Procedure – Unexpected Heritage Items~~ (Transport for NSW, 2022) will be followed in the event that any unexpected heritage items, archaeological remains or potential relics of Non-Aboriginal origin are encountered. Work will only re-commence once the requirements of that Procedure have been satisfied.	Contractor	Construction	Project REF
HH3	Sugarloaf Farm	Work associated with the widening of Menangle Road would limit incursions into the curtilage of Sugarloaf Farm as far as practical and in accordance with the Conservation Management Plan (Graham Brooks & Associates, 2001).	Contractor	Construction	Project REF
HH4	Impact to areas of archaeological potential	If relics of the Sugarloaf Farm, Glenlee or Grazier's Arms Inn are identified during works then the ~~Standard Management Procedure - Unexpected Heritage Items (Transport for NSW, 2022a)~~ **Unexpected heritage items procedure (Transport for NSW, 2022)** should be followed. This should include consideration and management of potential vibration related impacts.	Contractor	Construction	Project REF
HH5	Grazier's Arms Inn	Fencing would be installed on the northern boundary of Compound 1 to prevent access to and disturbance of Grazier's Arms Inn.	Contractor	Construction	Project REF
AHH6	Scope of works	It is noted that there are items of State Heritage Significance and archaeological potential in proximity to the proposed modification areas, and if the scope of works significantly change outside of the footprint currently presented, the impacts to these items would need to be reassessed.	Transport for NSW	Detailed design / pre-construction	Project REF – Addendum No.1
AHH7	Vibration impacts	For works in proximity to the Upper Canal and other WaterNSW lands, assets or infrastructure, the maximum allowable limit of vibration specified in DIN 1450 (Deutsches Institute für Normung, 1999) should be applied.	Contractor	Construction	Project REF – Addendum No.1
AHH8	Impacts to Upper Canal System (Pheasants Nest Weir to Prospect Reservoir) (SHR 01373)	As per WaterNSW risk management guidelines (WaterNSW, 2020) the following documentation is required prior to construction: • Heritage Impact	Transport for NSW	Pre-construction	Project REF – Addendum No.1

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
		– Heritage Impact Assessment (this assessment) – Unexpected Finds Protocol • Vibration – Assessment of the potential effects of vibration form the proposed works i.e. a dilapidation survey Vibration monitoring plan (can be contained within the project CEMP) • Additional loads on Water NSW structures – specific to Glenlee Road bridge – A structural engineer's report – Geotechnical report – Drawings or plans.			
AHH9	Impacts to Upper Canal System (Pheasants Nest Weir to Prospect Reservoir) (SHR 01373)	Following completion of the additional documentation and assessment, a revised assessment of impacts to the Glenlee Road bridge must be completed prior to its usage during construction in order to determine the suitability of proposed impacts and any requisite permit approvals.	Transport for NSW	Pre-construction	Project REF – Addendum No.1
AHH10	Former Grazier's Arms Inn Site	A site inspection should be conducted prior to construction to determine levels of site disturbance and confirm levels of archaeological potential. Any historical vegetation on site should also be determined and, if required, advice should be sought from a suitably qualified arborist.	Transport for NSW	Pre-construction	Project REF – Addendum No.1
AHH11	Former Grazier's Arms Inn Site	Archaeological test excavations are to be completed at the site to identify the presence of any archaeological material within the construction footprint. This will be completed with an excavation permit as per Section 140 of the Heritage Act. Further management measure recommendations can be added as appropriate, following the findings of the test excavation.	Transport for NSW	Pre-construction	Project REF – Addendum No.1
Aboriginal heritage					
ABH1	Impact known to Aboriginal heritage	An Aboriginal Heritage Management Plan (AHMP) will be prepared in accordance with the Procedure for Aboriginal cultural heritage consultation and investigation (Roads and Maritime,	Contractor	Detailed design / pre-construction	Project REF

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
		2012) and ~~Standard Management Procedure – Unexpected Heritage Items (Transport for NSW, 2022a)~~ **Unexpected heritage items procedure (Transport for NSW, 2022)** and implemented as part of the CEMP. It will provide specific guidance on measures and controls to be implemented for managing impact on Aboriginal heritage. The AHMP will be prepared in consultation with all relevant Aboriginal groups.			
ABH2	**Impact to known Aboriginal heritage**	An AHIP for the proposal would be obtained prior to construction, and any salvage would be undertaken in accordance with the proposed salvage methodology and any conditions of approval (if granted).	Transport for NSW / contractor	Pre-construction / construction	Project REF
ABH3	Finding unexpected artifacts	The ~~Standard Management Procedure – Unexpected Heritage Items (Transport for NSW, 2022a)~~ **Unexpected heritage items procedure (Transport for NSW, 2022)** will be followed in the event that an unknown or potential Aboriginal object/s, including skeletal remains, is found during construction.	Contractor	Pre-construction / construction	Project REF
AABH4	Impact to Menangle Park Rezoning Project 8	The proposed works are within the AHIP 4648 and AHIP C0005561 and may be completed under the existing AHIPs, provided that works are undertaken in accordance with the AHIP conditions. An AHIP is required prior to commencement of work affecting the site outside existing AHIP areas.	Transport for NSW	Pre-construction	Project REF – Addendum No.1
AABH5	Impact to Menangle Park Rezoning Project 8	Barrier fencing to be erected on the AHIP boundary for the extent of the site to ensure that no construction impact extends into the portion of the site outside the impact area. Portion of site area outside of impact area should be identified on the CEMP as an environmentally sensitive no-go zone to ensure no impact.	Contractor	Construction	Project REF – Addendum No.1
AABH6	Impact to Menangle Park Rezoning Project 8	Workers should be inducted as to appropriate measures for Aboriginal heritage.	Contractor	Construction	Project REF – Addendum No.1
Flooding					
AF1	Construction flood impacts	A Flood Management Plan **will** ~~should~~ be prepared by the contractor during construction planning phase to outline procedures for managing construction site operations and personnel safety in the event of a flood.	Contractor	Pre-construction	Project REF – Addendum No.1

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
		Access for emergency services will be retained throughout construction and the construction contractor would consult with emergency services prior to construction.			
AF2	Operational flood impacts	Development of an evacuation plan will be undertaken. The evacuation plan will be consulted with the resident of the impacted dwelling.	Transport for NSW	Post-construction	Project REF – Addendum No.1
Biodiversity					
BD1	Removal of native vegetation	Native vegetation removal will be ~~minimized~~ **minimised** through detailed design.	Transport for NSW	Detailed design	Project REF
BD2	Removal of native vegetation	Pre-clearing surveys will be undertaken in accordance with Guide 1: Pre-clearing process of the Biodiversity Guidelines: Protecting and managing biodiversity in RTA projects (RTA, 2011a).	Contractor	Pre-construction	Project REF
BD3	Removal of native vegetation	Vegetation removal will be undertaken in accordance with Guide 4: Clearing of vegetation and removal of bushrock of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011a).	Contractor	Construction	Project REF
BD4	Removal of native vegetation	Native vegetation will be re-established in accordance with Guide 3: Re-establishment of native vegetation of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011a).	Contractor	Construction	Project REF
BD5	Removal of native vegetation	The unexpected species find procedure is to be followed under Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011a) if threatened ecological communities, not assessed in the biodiversity assessment, are identified in the proposal site.	Contractor	Construction	Project REF
BD6	Removal of native vegetation	Clearing limits and exclusion zones would be clearly identified prior to work outside of the direct impact boundary or within no-go zones.	Contractor	Construction	Project REF – Addendum No.2
BD7	Removal of native vegetation	A Flora and Fauna Management Plan will be prepared in accordance with Roads and Maritime's Biodiversity Guidelines: Protecting and Managing Biodiversity on RTA Projects (RTA, 2011a) and implemented as part of the CEMP. It will include, but not be limited to:	Transport for NSW / Contractor	Detailed design / pre-construction	Project REF

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
		• Plans showing areas to be cleared and areas to be protected, including exclusion zones, protected habitat features and revegetation areas • Requirements set out in the Landscape Design Guideline (Roads and Maritime Services, 2019) • Pre-clearing survey requirements • Procedures for unexpected threatened species finds and fauna handling • Procedures addressing relevant matters specified in the Policy and guidelines for fish habitat conservation and management **(Department of Primary Industries, 2013)** ~~(DPI Fisheries, 2013)~~ • Protocols to manage weeds and pathogens.			
BD8	Removal of threatened species habitat and habitat features	Habitat removal will be minimised through detailed design.	Transport for NSW	Detailed design	Project REF
BD9	Removal of threatened species habitat and habitat features	Habitat removal will be undertaken in accordance with Guide 4: Clearing of vegetation and removal of bushrock of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011a).	Transport for NSW	Detailed design	Project REF
BD10	Removal of threatened species habitat and habitat features	Habitat will be replaced or re-instated in accordance with Guide 5: Re-use of woody debris and bushrock and Guide 8: Nest boxes of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011a). This will include installation of nest boxes to replace lost hollows and salvage and reuse/installation of hollows from hollow-bearing trees that are removed.	Contractor	Construction	Project REF
BD11	Removal of threatened species habitat and habitat features	The unexpected species find procedure is to be followed under Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011a) if threatened fauna, not assessed in the biodiversity assessment, are identified in the proposal site.	Contractor	Construction	Project REF
BD12	Removal of threatened species habitat and habitat features	Important habitat features such as woody debris and bushrock would be re-used in suitable locations nearby, in accordance with Guide 5: Re-use of woody debris and bushrock of the Roads and Maritime Biodiversity Guidelines (RTA, 2011a).	Contractor	Construction	Project REF

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
BD13	Removal of threatened plants	Pre-clearing surveys will be undertaken in accordance with Guide 1: Pre-clearing process of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011a).	Contractor	Construction	Project REF
BD14	Removal of threatened plants	Clearing limits and exclusion zones clearly identified prior to work within the vicinity of the population of Pimelea spicata ensure no impacts to the population.	Contractor	Construction	Project REF
BD15	Aquatic impacts	Aquatic habitat will be protected in accordance with Guide 10: Aquatic habitats and riparian zones of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011a) and Section 3.3.2 Standard precautions and mitigation measures of the Policy and guidelines for fish habitat conservation and management Update 2013 (DPI (Fisheries NSW) 2013).	Contractor	Construction	Project REF
BD16	Groundwater dependent ecosystems	Interruptions to water flows associated with groundwater dependent ecosystems will be minimised through detailed design.	Contractor	Construction	Project REF
BD17	Fragmentation of identified habitat corridors	Connectivity measures will be implemented in accordance with the Wildlife Connectivity Guidelines for Road Projects (RTA, 2011b).	Transport for NSW	Detailed design	Project REF
BD18	Fragmentation of identified habitat corridors	Any connectivity measures implemented will be designed and installed under the supervision of an experienced ecologist.	Transport for NSW	Detailed design / operation	Project REF
BD19	Fragmentation of identified habitat corridors	Wildlife signage, street lighting and appropriate vehicle calming devices will be considered in areas with a history of fauna vehicle strike.	Transport for NSW / Contractor	Detailed design / pre-construction	Project REF
BD20	Fragmentation of identified habitat corridors	Consider installation of glider poles and/or rope crossings to assist fauna to cross the road safely.	Contractor	Construction	Project REF
BD21	Edge effects on adjacent native vegetation and habitat	Exclusion zones will be set up at the limit of clearing in accordance with Guide 2: Exclusion zones of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011a).	Contractor	Construction	Project REF
BD22	**Clearing limits and exclusion zones**	Clearing limits and exclusion zones **will be** clearly identified prior to within/adjacent Cumberland Plain Woodland and Swamp Oak Floodplain Forest.	Contractor	Construction	Project REF
BD23	Injury and mortality of fauna	Fauna will be managed in accordance with Guide 9: Fauna handline of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011a).	Transport for NSW / Contractor	Detailed design / pre-construction	Project REF

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
BD24	Injury and mortality of fauna	Implementation of two stage clearing process to allow fauna to disperse from habitat voluntarily; inspection of hollows by experienced ecologist/fauna spotter/catcher prior to and after clearing of hollow-bearing trees/stags to safely remove and relocate any injured/displaced fauna.	Contractor	Construction	Project REF
BD25	Invasion and spread of weeds	Weed species will be managed in accordance with Guide 6: Weed management of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011a).	Transport for NSW / Contractor	Detailed design / pre-construction	Project REF
BD26	Invasion and spread of weeds	Establishment of clearing limits and exclusion zones within/adjacent to Cumberland Plain Woodland and Swamp Oak Floodplain Forest.	Contractor	Construction	Project REF
BD27	Invasion and spread of weeds	To prevent the spread of weed seed, all weed material removed will be disposed of in a suitable waste facility and not mulched on site. This is to avoid the reintroduction and further spread of weeds in the area.	Contractor	Construction	Project REF
BD28	Invasion and spread of pests	Pest species will be managed within the proposal site by ensuring vehicles, equipment and personal protective equipment/boots are clean and free of weeds and pathogens when entering and exiting site.	Contractor	Construction	Project REF
BD29	Invasion and spread of pathogens and disease	Pathogens will be managed in accordance with Guide 2: Exclusion zones of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011a).	Contractor	Construction	Project REF
BD30	Noise, light and vibration	Shading and artificial light impacts will be minimised through detailed design.	Contractor	Construction	Project REF
BD31	Removal of native vegetation	Exclusion zone around the Freshwater Wetlands adjacent to the impact area to reduce the risk of accidental impacts.	Contractor	Construction	Project REF – Addendum No.1
BD32	Removal of native vegetation	The compound sites and access tracks will be left to regenerate post construction work.	Transport for NSW / Contractor	Post-construction	Project REF – Addendum No.1
BD33	Aquatic impacts	Works in the vicinity of the unnamed first order ephemeral waterway and third order water waterway will occur during dry periods where possible to prevent soil compression, bank slumping, soil erosion and sediment laden runoff from entering the waterway.	Contractor	Construction	Project REF – Addendum No.1
BD34	Aquatic impacts	Sediment and erosion controls will be installed around the perimeter of all soil disturbance and the proposed waterway crossing to reduce potential soil erosion and sediment laden	Contractor	Construction	Project REF – Addendum No.1

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
		runoff from entering the waterway or affecting nearby native vegetation.			
BD35	Fauna impacts	If microbats are encountered or spotted during construction, a stop works and further assessment procedure (by an ecologist) should be implemented.	Contractor	Construction	Project REF – Addendum No.1
BD36	Invasion and spread of weeds and pests	Ensure machinery is clean and free of introduced plant seeds prior to activities on site. Under *Biosecurity Act 2015* there are recommended measures for removal of weed species within the Greater Sydney region. Woody weed species required removal from site and are not to be mulched onsite.	Contractor	Construction	Project REF – Addendum No.1
BD37	Invasion and spread of weeds and pests	Measures to prevent the spread of Chytrid fungus would be employed in accordance with the Hygiene protocol for the control of disease in frogs **(Department of Environment and Climate Change, 2008)** ~~(DECC, 2008)~~.	Contractor	Construction	Project REF – Addendum No.1
Socio-economic					
SEC1	Property acquisition	All property acquisition will be carried out in accordance with the **Roads and Maritime Services** Land Acquisition Information Guide **(Roads and Maritime, 2014)** ~~(Roads and Maritime, 2014b)~~ and the *Land Acquisition (Just Terms Compensation) Act 1991*.	Transport for NSW project manager	Pre-construction / construction	Project REF
SEC2	Socio-economic	A Communication Engagement and Stakeholder Management Plan (CESMP) will be prepared and implemented as part of the CEMP to help provide timely and accurate information to the community during construction. The CESMP will include (as a minimum): • Mechanisms to provide details and timing of the proposed activities to affected residents, including changed traffic and access conditions • Contact name and number for complaints. The CESMP will be prepared in accordance with the Community Involvement and Communications Resource Manual (RTA, 2008).	Contractor	Detailed design / pre-construction	Project REF
SEC3	Socio-economic	Ongoing consultation will be carried out with managers and users of potentially affected social infrastructure (e.g. Broughton Anglican College, Campbelltown Steam and Machinery Museum, and Bellbirds Early Learning Centre) regarding the timing,	Contractor	Construction	Project REF

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
		duration and likely impact of construction impact of construction activities.			
SEC4	Socio-economic	Consideration will be given to the timing of construction activities near to social infrastructure in relation to key usage times of social infrastructure (e.g. open days at Campbelltown Steam and Machinery Museum).	Contractor	Construction	Project REF
SEC5	Access and connectivity	Communication will be carried out with the Broughton Anglican college about the timing of haulage activities and potential changes to road conditions.	Contractor	Construction	Project REF
SEC6	Property acquisition	Awareness programs will be carried out for construction workers and transport operators for the proposal about potential road safety risks, including near to Broughton Anglican College and Bluebells ELC.	Contractor	Construction	Project REF
ASEC7	Closure of the informal rest area	Ongoing consultation will be carried out with users of the informal rest area regarding the timing of its closure.	Transport for NSW	Pre-construction	Project REF – Addendum No.1
Contamination					
C1	Contaminated land	If contaminated areas are encountered during construction, appropriate control measures will be implemented to manage the immediate risks of contamination. All other work that may impact on the contaminated area will cease until the nature and extent of the contamination has been confirmed and any necessary site-specific controls or further actions identified in consultation with the Roads and Maritime Environment Manager and/or EPA.	Contractor	Detailed design / pre-construction	Project REF
C2	Accidental spill	A site specific emergency spill plan will be developed, and include spill management measures in accordance with the Code of Practice for Water Management (RTA, 1999) and relevant EPA guidelines. The plan will address measures to be implemented in the event of a spill, including initial response and containment, notification of emergency services and relevant authorities (including Roads and Maritime and EPA officers).	Contractor	Detailed design / pre-construction	Project REF
AC3	Contamination	A Remediation Action Plan (RAP) and an Unexpected Find Protocol (UFP) will be prepared and implemented to manage the	Contractor	Pre-construction	Project REF – Addendum No.1

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
		potential for soil or water quality contamination during construction of the proposal. The RAP will: • Evaluate potential remedial options and recommend a preferred option to manage the Asbestos Containing Materials (ACM) during construction • Include a Long-term environmental managed plan for the ACM (should it remain in the proposal alignment) • Include a preliminary plan to manage potential risks to human health and the environment during the remediate activities. • The RAP will form a part of the overall CEMP.			
Air quality					
AQ1	Air quality	An Air Quality Management Plan (AQMP) will be prepared and implemented as part of the CEMP. The AQMP will include, but not be limited to: • Potential sources of air pollution • Air quality management objectives consistent with any relevant published EPA and/or OEH guidelines • Mitigation and suppression measures to be implemented • Compliance with Stockpile Site Management Guidelines (Roads and Maritime, 2015) • Methods to manage work during strong winds or other adverse weather conditions • A progressive rehabilitation strategy for exposed surfaces.	Contractor	Detailed design / pre-construction	Project REF
Waste					
WAS1	Waste	A Waste Management Plan (WMP) will be prepared and implemented as part of the CEMP. The WMP will include but not be limited to: • Measures to avoid and minimise waste associated with the proposal	Contractor	Detailed design / pre-construction	Project REF

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
		• Classification of wastes and management options (re-use, recycle, stockpile, disposal) • Statutory approvals required for managing both on and off-site waste, or application of any relevant resource recovery exemptions • Procedures for storage, transport and disposal (to be disposed of at a registered waste facility) • Monitoring, record keeping and reporting. The WMP will be prepared taking into account the Environmental Procedure - Management of Wastes on Roads and Maritime Services Land (Roads and Maritime, 2014) and relevant Roads and Maritime Waste Fact Sheets.			
WAS2	Waste	Waste material, other than vegetation and mulch, is not to be left on site once the work has been completed.	Contractor	Construction	Project REF
WAS3	Spill management	An emergency spill kit that is in good, working condition is to be kept on site at all times. All staff are to be made aware of the location of the spill kit and trained in its use.	Contractor	Construction	Project REF
Groundwater					
GW1	Groundwater	Groundwater quality is to be monitored on a quarterly basis over three sampling rounds at Roads and Maritime groundwater monitoring boreholes (BH1002 and BH1003) to provide baseline groundwater quality data for the proposal.	Transport for NSW	Detailed design / pre-construction	Project REF
GW2	Groundwater – accidental spills	Secure, bunded areas would be provided around storage area for oils, fuels and other hazardous liquids.	Contractor	Construction	Project REF
Greenhouse gases					
GG1	Greenhouse gases – emissions	Identify recycled materials (such as aggregates in road pavement and surfacing; steel and recycled content) for use in construction or operation of the proposal where they are cost, quality and performance competitive.	Contractor	Detailed design	Project REF
GG2	Greenhouse gases – emissions	Review of cut and fill balances for earthworks to ensure material is transported the least possible distances.	Contractor	Construction	Project REF

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
Hazards and risk management					
HAZ1	Hazards and risk management	A Hazard and Risk Management Plan (HRMP) will be prepared and implemented as part of the CEMP. The HRMP will include, but not be limited to: • Details of hazards and risks associated with the activity • Measures to be implemented during construction to minimise these risks • Record keeping arrangements, including information on the materials present on the site, material safety data sheets, and personnel trained and authorised to use such materials • A monitoring program to assess performance in managing the identified risks • Contingency measures to be implemented in the event of unexpected hazards or risks arising, including emergency situations. The HRMP will be prepared in accordance with relevant guidelines and standards, including relevant Safe Work Australia Codes of Practice, and EPA or Office of Environment and Heritage publications.	Contractor	Detailed design / pre-construction	Project REF
HAZ2	Hazards and risk – bushfire	Bushfire Risk Management Plan (BRMP) will be prepared and implemented as part of the CEMP. The BRMP will include but not be limited to: • Fire response equipment such as fire extinguisher and fire blanket to be kept on vehicles at the work and compound sites • The fire rating will be checked at the start of each day • Hot work will not be permitted on total fire ban days • An evacuation plan will be kept onsite and staff will be made aware of this and their responsibilities in the event of a fire. A site for smoking will be established at least 40 metres away from dense vegetation and butt disposal bins will be made available.	Contractor	Detailed design / pre-construction	Project REF

No.	Impact	Environmental safeguards and management measures	Responsibility	Timing	Reference
HAZ3	Hazards and risk – mine subsidence	Submit an Engineering Impact Statement, detailing the final design and design methodology for acceptance by Subsidence Advisory NSW.	Transport for NSW	Detailed design / pre-construction	Project REF
HAZ4	Hazards and risk – mine subsidence	Establish a number of permanent survey marks to Australian Height Datum so that building movement can be monitored should mine subsidence occur. Details of these permanent survey marks are to be forwarded to Subsidence Advisory NSW.	Contractor	Construction	Project REF
Utilities					
UT1	Utilities	Prior to the commencement of work: • Additional potholing would be required to confirm depths of APT Management high pressure gas transmission pipeline beneath Menangle Road during detailed design • The location of existing utilities and relocation details will be confirmed following consultation with the affected utility owners. If the scope or location of proposed utility relocation work falls outside of the assessed proposal scope and footprint, further assessment will be carried out.	Contractor	Detailed design / pre-construction	Project REF

7.3 Licensing and approvals

All relevant licenses, permits, notifications and approvals needed for the modified project are described in Section 7.3 of Addendum REF No. 1. The construction contractor (Georgiou Group Pty Ltd) holds an EPL for the project (No. 21673). The EPL premises boundary would be modified as required to reflect changes to the new project boundary. No additional licenses, permits, notifications and approvals would be required as a result of the proposed modification.

8. Conclusion

8.1 Justification

The proposed modification reflects further design development and construction planning.

While there are some potential environmental impacts associated with the proposed modification, they would be minor and are adequately addressed through the safeguards listed Table 7-1.

8.2 Objects of the EP&A Act

The consistency of the proposed modification with the objectives of the EP&A Act is considered in Table 8-1.

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

Object	Comment
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 manage, develop and conserve natural and other resources appropriately, resulting in social and economic benefit to the community. The proposed modification would decrease the direct impact boundary at Area 1, which would reduce some environmental impacts associated with the approved project. The proposed modification would also assist in maintaining the integrity and prolonging the life of existing stormwater pipes at Area 2 and improve the functioning of the stormwater system at Area 3. The proposed modification would not have any significant impacts on the social and economic welfare of the community.
1.3(b) To facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment.	Ecologically sustainable development associated with the proposed modification is considered in Section 8.3.
1.3(c) To promote the orderly and economic use and development of land.	The proposed modification would include the lining of existing stormwater pipes underneath the Hume Motorway at Area 2. This would assist in maintaining the integrity and prolonging the life of the existing stormwater pipes. The proposed modification would also include the removal of sedimentation in an unnamed drainage line at Area 3. This would assist in removing obstructions and improve the functioning of the stormwater system for the surrounding catchment, including at Menangle Road. A decrease to the direct impact boundary at Area 1 would assist in reducing some environmental impacts associated with the approved project.
1.3(d) To promote the delivery and maintenance of affordable housing.	Not relevant to the proposed modification.
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 has been designed to minimise impacts to any threatened or other species of native animals and plants, ecological communities and their habitats. Safeguards and management measures have been updated to address any potential impacts associated with the proposed modification (refer to Section 6.1.4).
1.3(f) To promote the sustainable management of built and	Potential impacts to built and cultural heritage (including Aboriginal cultural heritage) have been addressed as part of the approved project.

Object	Comment
cultural heritage (including Aboriginal cultural heritage).	The proposed modification would not likely to present any additional impacts to heritage.
1.3(g) To promote good design and amenity of the built environment.	The proposed modification would not significantly alter the design as per the approved project. And therefore, would not have a negative impact on the amenity of the built environment.
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.	Not relevant to the proposed modification.
1.3(j) To provide increased opportunity for community participation in environmental planning and assessment.	Community consultation has been carried out as part of the approved project (refer to Chapter 5).

8.3 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.

8.3.1 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. Where possible, professional advice has been obtained to address any absence of scientific certainty, particularly in relation to potential impacts to flora and fauna as a result of the proposed modification.

8.3.2 Intergenerational 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 proposed modification are primarily short term and manageable. Permanent elements, such as new signs, are consistent with the character of the area. The proposed modification supports the approved project as a whole, which will in turn support the growth of new community centres in the Greater Macarthur Growth Area.

8.3.3 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 biodiversity assessment (refer to Appendix C) concluded that a significant impact to a threatened species, population or community would be unlikely. No additional offsets to those described in the Addendum REF No. 3 would be required for the proposed modification.

8.3.4 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.

8.4 Conclusion

This addendum 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, populations 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 proposed modification have been avoided or reduced during the design development and options assessment. The proposed modification as described in the addendum REF best meets the project objectives but would still result in some impacts on biodiversity. Safeguards and management measures as detailed in this addendum REF would ameliorate or minimise these expected impacts. The proposed modification would also better support the construction of the approved project. The proposed modification would include the lining of existing stormwater pipes underneath the Hume Motorway at Area 2. This would assist in maintaining the integrity and prolonging the life of the existing stormwater pipes. The proposed modification would also include the removal of sedimentation in an unnamed drainage line at Area 3. This would assist in removing obstructions and improve the functioning of the stormwater system for the surrounding catchment, including at Menangle Road. A decrease to the direct impact boundary at Area 1 would assist in reducing some environmental impacts associated with the approved project.

8.4.1 Significance of impact under NSW legislation

The proposed modification would not result in a change to the findings of the project REF [also refer to the submissions report and any other previous addendum REFs if relevant] and 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 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.

8.4.2 Significance of impact under Australian legislation

The proposed modification would not likely cause a significant impact on matters of national environmental significance or the environment of Commonwealth land within the meaning of the EPBC Act. A referral to the Australian Government Department of Climate Change, Energy, the Environment and Water 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.

Stuart Hill
Principal - environment
bd infrastructure

Date: 30 September 2024

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

Parthi Parthiban
Project Manager
Transport for NSW

Date:

10. EP&A Regulation publication requirement

Respondent	Yes/No
Does this REF need to be published under section 171(4) of the EP&A Regulation?	No

11. Terms and acronyms used in this addendum REF

Term /acronym	Description
ACM	Asbestos Containing Materials
BC Act	*Biodiversity Conservation Act 2016 (NSW).*
CEMP	Construction / Contractor's environmental management plan
EIA	Environmental impact assessment
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.
ESD	Ecologically sustainable development. Development which uses, conserves and enhances the resources of the community so that ecological processes on which life depends, are maintained and the total quality of life, now and in the future, can be increased
FM Act	*Fisheries Management Act 1994* (NSW)
Heritage Act	*Heritage Act 1977* (NSW)
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan. A type of planning instrument made under Part 3 of the EP&A Act.
NES	Matters of national environmental significance under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.
NPW Act	National Parks and Wildlife Act 1974 (NSW)
Roads and Maritime Services	NSW Roads and Maritime was dissolved by the Transport Administration Amendment Bill in August 2019, all functions of which are now managed by Transport for NSW.
SEPP	State Environmental Planning Policy. A type of planning instrument made under Part 3 of the EP&A Act.
SEPP (Biodiversity and Conservation)	State Environmental Planning Policy (Biodiversity and Conservation) 2021
SEPP (Planning Systems)	State Environmental Planning Policy (Planning Systems) 2021
SEPP (Precincts – Central River City)	State Environmental Planning Policy (Precincts – Central River City) 2021
SEPP (Precincts – Eastern Harbour City)	State Environmental Planning Policy (Precincts – Eastern Harbour City) 2021
SEPP (Precincts – Regional)	State Environmental Planning Policy (Precincts – Regional) 2021
SEPP (Precincts – Western Parkland City)	State Environmental Planning Policy (Precincts – Western Parkland City) 2021
SEPP (Resilience and Hazards)	State Environmental Planning Policy (Resilience and Hazards) 2021

12. References

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Appendix A

Consideration of section 171(2) factors and matters of National Environmental Significance and Commonwealth land

Section 171(2) checklist

In addition to the requirements of the Guidelines for Division 5.1 assessments (Department of Planning and Environment, 2022) as detailed in this addendum REF, the following factors, listed in section 171(2) of the Environmental Planning and Assessment Regulation 2021, have also been considered to assess the likely impacts of the proposed modification on the natural and built environment.

Factor	Impact
Any environmental impact on a community? The proposed modification would result in some short-term amenity-related impacts to the community during construction, including potential visual and noise impacts. However, as the site is currently under construction as part of the approved project, these potential impacts are considered to be minor. Once operational, the proposed modification would assist in maintaining the integrity and prolonging the life at existing stormwater pipes at Area 2 and assist in improving the functioning of the stormwater system at Area 3.	**Short-term minor negative.** **Long-term positive.**
Any transformation of a locality? The proposed modification may result in short-term disruption during construction leading to noise and traffic impacts. The impact would be mitigated with the implementation of recommended safeguards and management measures identified in Section 7.2. The proposed modification would include a decrease to the direct impact boundary at Area 1 to recognise an area that is no longer required for use as a construction access route. This would assist in reducing some environmental impacts associated with the approved project. Vegetation removal at Area 3 would have a low impact on the locality.	Short-term minor negative. Short-term minor positive. Long-term minor negative.
Any environmental impact on the ecosystems of the locality? The proposed modification would result in some changes to the amount of vegetation to be impacted. This would include a reduction to the overall impact area for the Cumberland Plain Woodland (low condition Derived Native Grassland) from 8.29 hectares to 8.18 hectares, and an increase to the overall impact area for the Cumberland Plain Woodland (low condition woodland dominated by African Olive) from 3.61 hectares to 3.65 hectares. The biodiversity assessment (refer to Appendix C) concluded that a significant impact to a threatened species, population or community would be unlikely. No additional offsets to those described in Addendum REF No. 3 would be required for the proposed modification. The proposed modification would also realign the existing open drainage line at Area 3.	**Short-term minor negative.**
Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality? The proposed modification may result in short-term impacts to amenity (such as noise and vibration) during construction. The proposed modification may also result in short-term impacts to visual amenity due to the presence of construction plant and machinery, vegetation removal, excavation and other construction activities. Any potential impacts would be mitigated with the implementation of recommended safeguards and management measures identified in Section 7.2. The proposed modification is unlikely to result in impacts to recreational, scientific or other environmental quality or value of the locality.	Short-term minor negative.

Factor	Impact
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 would not affect areas with aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance.	Nil.
Any impact on the habitat of protected fauna (within the meaning of the *National Parks and Wildlife Act 1974*)? The proposed modification would have some potential impacts on protected native fauna due to vegetation removal during construction. The biodiversity assessment (refer to Appendix C) concluded that a significant impact to a threatened species, population or community would be unlikely.	Short-term minor negative.
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 result in some changes to the amount of vegetation to be impacted. This would include a reduction to the overall impact area for the Cumberland Plain Woodland (low condition Derived Native Grassland) from 8.29 hectares to 8.18 hectares, and an increase to the overall impact area for the Cumberland Plain Woodland (low condition woodland dominated by African Olive) from 3.61 hectares to 3.65 hectares. The biodiversity assessment (refer to Appendix C) concluded that a significant impact to a threatened species, population or community would be unlikely. No additional offsets to those described in the Addendum REF No. 3 would be required for the proposed modification.	Short-term minor negative.
Any long-term effects on the environment? The proposed modification would result in some changes to the amount of vegetation to be impacted. The biodiversity assessment (refer to Appendix C) concluded that a significant impact to a threatened species, population or community would be unlikely.	Long-term minor negative.
Any degradation of the quality of the environment? **The proposed modification would result in some changes to the quality of the environment, including from vegetation removal.** The biodiversity assessment (refer to Appendix C) concluded that a significant impact to a threatened species, population or community would be unlikely.	Short-term minor negative.
Any risk to the safety of the environment? Potential risks to the safety of the environment would be minor and generally limited to accidental spills and leaks during construction. This would be managed through the implementation of safeguards and management measures identified in Section 7.2.	Short-term minor negative.
Any reduction in the range of beneficial uses of the environment? The modified project is located almost exclusively within land zoned for the provision of a new road corridor. Some property acquisition was approved for land immediately adjacent to the road corridor, including acquisition of some private property, and partial acquisition of an area of Sugarloaf Farm (State heritage listed item) as part of the approved project. This acquisition would not affect the use and enjoyment of Sugarloaf Farm.	Long-term minor negative.
Any pollution of the environment?	Short-term minor negative.

Factor	Impact
Construction of the proposed modification would result in dust generation and air and noise emissions from machinery and construction vehicles. There is a risk of pollution to the surrounding watercourses and drainage lines. The management measures proposed would help reduce the risk of air and water pollution (refer to Section 7.2). During operation, pollution would largely be consistent with the current use. The modified project has been designed to ensure it complies with all safety requirements. As such, this reduces the impact of any accidents or incidents that may result in pollution, contamination or other environmental safety concerns. While this risk cannot be fully discounted, it has been reduced to a level that is achievable, feasible and reasonable.	 Nil.
Any environmental problems associated with the disposal of waste? During construction, waste streams would include vegetative waste and surplus spoil. Where possible, excavated materials would be used on-site. Where this is not possible, waste would be classified to identify suitable recycling and safe disposal methods in accordance with the Waste Management Guideline (Transport for NSW, 2023) and the requirements of the Waste Classification Guidelines (Environment Protection Authority, 2014). During operation, waste generation is expected to be minimal and consistent with the current use.	Short-term minor negative. Nil.
Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply? **It is unlikely that any resources required for the proposed modification would be in short supply.**	Nil.
Any cumulative environmental effect with other existing or likely future activities? Construction of the proposed modification may be carried out with other proposals, including residential development at land release sites and nearby road upgrades. Cumulative impacts could include noise impacts, dust or other amenity impacts and community fatigue. Where necessary, environmental management measures would be coordinated to reduce cumulative construction impacts. The proposed modification would be unlikely to have any long-term impacts.	Short-term minor negative.
Any impact on coastal processes and coastal hazards, including those under projected climate change conditions? None, as the proposed modification is located outside of coastal areas.	Nil.
Applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1. The relevant strategic plans are: • Greater Sydney Region Plan: A Metropolis of Three Cites (Greater Sydney Commission, 2018) • Our Greater Sydney 2050: Western City District Plan (Greater Sydney Commission, 2018) • Greater Macarthur 2040: An interim plan for the Greater Macarthur Growth Area (Department of Planning and Environment, 2018) • Local Strategic Planning Statement: Campbelltown (Campbelltown City Council, 2020). The approved project would support the transformation of the Greater Macarthur Priority Growth Area in accordance with the above strategies,	Long-term positive.

Factor	Impact
by providing roads, interchanges and intersections to connect and service future residential land releases within the Greater Macarthur Growth Area, including alternative connection to Spring Farm, Elderslie, Menangle Park, and Mount Gilead and connection to connect Camden Bypass, the Hume Motorway and Menangle Road.	

Matters of National Environmental Significance and Commonwealth land

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

Under the EPBC Act strategic assessment approval a referral is not required for proposed road actions that may affect nationally listed threatened species, populations, endangered ecological communities and migratory species. Impacts on these matters are assessed in detail as part of this addendum REF in accordance with Australian Government significant impact criteria and taking into account relevant guidelines and policies.

Factor	Impact
Any impact on a World Heritage property?	Nil
Any impact on a National Heritage place?	Nil
Any impact on a wetland of international importance?	Nil
Any impact on a listed threatened species or communities? The proposed modification would result in some changes to the amount of vegetation to be impacted. This would include a reduction to the overall impact area for the Cumberland Plain Woodland (low condition Derived Native Grassland) from 8.29 hectares to 8.18 hectares, and an increase to the overall impact area for the Cumberland Plain Woodland (low condition woodland dominated by African Olive) from 3.61 hectares to 3.65 hectares. The biodiversity assessment concluded that a significant impact to a threatened species, population or community would be unlikely. No additional offsets to those described in the Addendum REF No. 3 would be required for the proposed modification.	Long-term negative minor. Not significant.
Any impacts on listed migratory species?	Nil
Any impact on a Commonwealth marine area?	Nil
Does the proposed modification involve a nuclear action (including uranium mining)?	Nil
Additionally, any impact (direct or indirect) on Commonwealth land?	Nil

Appendix B

Statutory consultation checklists

Matters of National Environmental Significance and Commonwealth land

Certain development types

Development type	Description	Yes / No	If 'yes' consult with	SEPP (Transport and Infrastructure) section
Car park	Does the project include a car park intended for the use by commuters using regular bus services?	No	-	Section 2.110
Bus depots	Does the project propose a bus depot?	No	-	Section 2.110
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	-	Section 2.110

Development within the Coastal Zone

Issue	Description	Yes / No / N/A	If 'yes' consult with	SEPP (Transport and Infrastructure) section
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	-	Section 2.14

Note: See interactive map Coastal management - (nsw.gov.au). Note the coastal vulnerability area has not yet been mapped.

Note: a certified coastal zone management plan is taken to be a certified coastal management program.

Council related infrastructure or services

Development type	Potential impact	Yes / No	If 'yes' consult with the relevant local council(s).	SEPP (Transport and Infrastructure) section
Stormwater	Are the works likely to have a substantial impact on the stormwater management services which are provided by council?	No	N/A	Section 2.10
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?	Yes	Campbelltown City Council – consultation undertaken as part of project REF	Section 2.10
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	N/A	Section 2.10
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?	Yes	Campbelltown City Council – consultation undertaken as part of project REF	Section 2.10
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	N/A	Section 2.10
Road and 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?	Yes	Campbelltown City Council – consultation undertaken as part of project REF	Section 2.10

Local heritage items

Development type	Potential impact	Yes / No	If 'yes' consult with the relevant local council(s).	SEPP (Transport and Infrastructure) section
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	N/A All heritage items within the study area are listed on the State Heritage Register. Potential impacts have been considered as such.	Section 2.11

Flood liable land

Development type	Potential impact	Yes / No	If 'yes' consult with	SEPP (Transport and Infrastructure) section
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	N/A	Section 2.12
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 (SES) – consultation undertaken as part of project REF	Section 2.13

Note: Flood liable land means land that is susceptible to flooding by the probable maximum flood event, identified in accordance with the principles set out in the manual entitled Floodplain Development Manual: the management of flood liable land published by the New South Wales Government.

Public authorities other than councils

Development type	Potential impact	Yes / No	If 'yes' consult with the relevant local council(s).	SEPP (Transport and Infrastructure) section
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	DPE	Section 2.15
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	DPE	Section 2.15
Aquatic reserves and marine parks	Are the works adjacent to an aquatic reserve or a marine park declared under the *Marine Estate Management Act 2014*?	No	Department of Industry	Section 2.15
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	Section 2.15
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	Section 2.15
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	Section 2.15
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 section 5.15 of Lockhart LEP 2012, Narrandera LEP 2013 and Urana LEP 2011).	No	Secretary of the Commonwealth Department of Defence	Section 2.15

Development type	Potential impact	Yes / No	If 'yes' consult with the relevant local council(s).	SEPP (Transport and Infrastructure) section
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	Section 2.15

SEPP (Precincts – Central River City) 2021 and SEPP (Precincts – Western Parkland City) 2021

Development type	Potential impact	Yes / No	If 'yes' consult with the relevant local council(s).	SEPP (Transport and Infrastructure) section
Clearing native vegetation	Do the works involve clearing native vegetation (as defined in the Local Land Services Act 2013) on land that is not subject land (as defined in cl 17 of schedule 7 of the *Threatened Species Conservation Act 1995*)?	No	Department of Planning and Environment	Section 3.24

Appendix C

Biodiversity Memorandum (East Coast Ecology, 2024)

Stuart Hill
Principal - Environment
BD Infrastructure

11th September 2024

Biodiversity Memo for Spring Farm Parkway Stage 1 – Addendum 4

Dear Stuart,

Transport for NSW (Transport) is proposing to deliver Spring Farm Parkway Stage 1 (the proposal), which would provide access to new residential land releases on the western side of the Hume Motorway. The proposal forms part of the delivery of Spring Farm Parkway Stage 1, which is has been divided into two stages. Once both stages are complete, Spring Farm Parkway Stage 1 would provide a 6.1km east-west arterial road link between Camden Bypass, the M31 Hume Motorway (the Hume Motorway) and Menangle Road in Sydney's south west, 11km south of Campbelltown and 70km from Sydney CBD. It is understood that Transport proposes a modification to Spring Farm Parkway Stage 1 as detailed in the Project Review of Environmental Factors (REF) (Roads and Maritime, February 2019), supporting submission report (Jacobs, October 2019), Spring Farm Parkway Stage 1 Ecology Assessment Second Addendum REF (A2REF) (Niche, May 2022) and Spring Farm Parkway Stage 1 Ecology Assessment Third Addendum REF (A3REF) (Niche, November 2022). The A2REF summarised and included Spring Farm Parkway Stage 1 Ecology Assessment First Addendum REF (A1REF). The project as described in these documents is referred to as 'the approved project' throughout this document.

The proposed modification (the area of which is hereafter referred to as the 'Subject Land') would involve altering the A3REF direct impact boundary and No-Go Areas to complete the works (**Figure 2**). Specifically, Transport proposes to:

- Reduce the direct impact boundary at Area 1 (approximately 2,250m^2) as the area is no longer required
- Increase the direct impact boundary at Area 2 (approximately 480m^2) (No-Go Area) to allow additional construction works to be completed, and
- Increase the direct impact boundary at Area 3 (approximately 465m^2) to allow additional construction works to be completed.

The final project boundary, which is being assessed as part of the current assessment, is shown in **Figure 1**.

1. PREVIOUS BIODIVERSITY ASSESSMENTS

In 2019 Niche Environment and Heritage Pty Ltd (Niche) were commissioned by Transport to complete the Biodiversity Assessment component of the Spring Farm Parkway Stage 1 Review of Environmental Factors (Project REF) (Niche, 2019). In 2021 and again in 2022, the scope of works was modified to include additional site compounds and access tracks on the western and northern sides of the proposal area, as well as potential tree trimming along Glenlee Road.

Given the finalised Project Boundary constitutes portions of the Project REF, A1REF, A2REF and A3REF study areas, the survey methods and results for Project REF, A1REF, A2REF and A3REF have been used in this Fourth

Addendum REF (A4REF). The impacts presented in the Project REF have been included in this letter report to adequately assess the cumulative impacts of the proposal.

2. AIMS

This memo aims to:

- Assess the potential impact of the proposed modification on biodiversity values listed under the *Biodiversity Conservation Act 2016* (NSW) (BC Act) and the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act), and
- Determine biodiversity offsets required for the project under the Transport Guideline for Biodiversity Offsets (RMS, 2016).

This Addendum should be read in conjunction with the Project REF, A1REF, A2REF and A3REF.

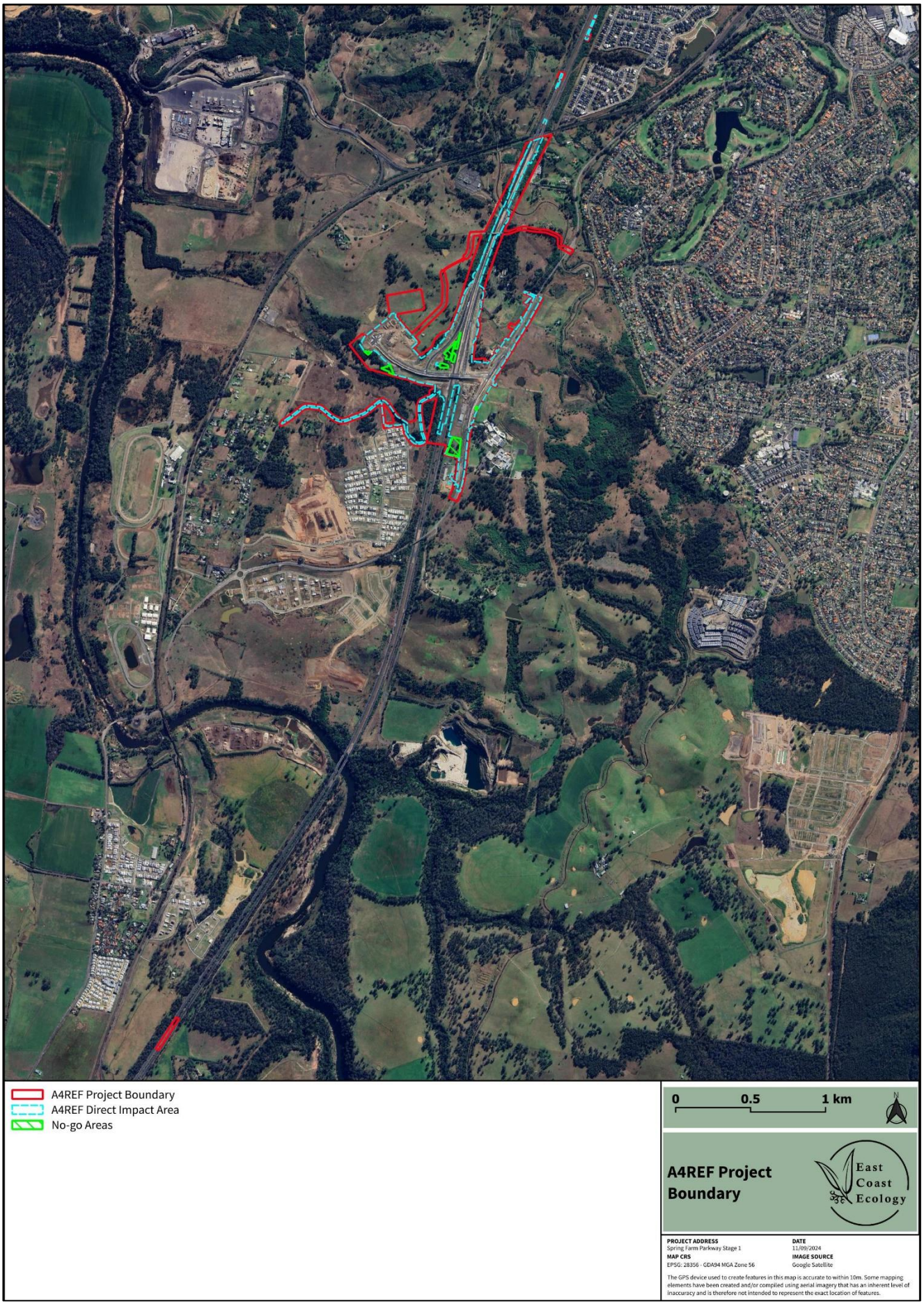

Figure 1. A4REF Project Boundary.

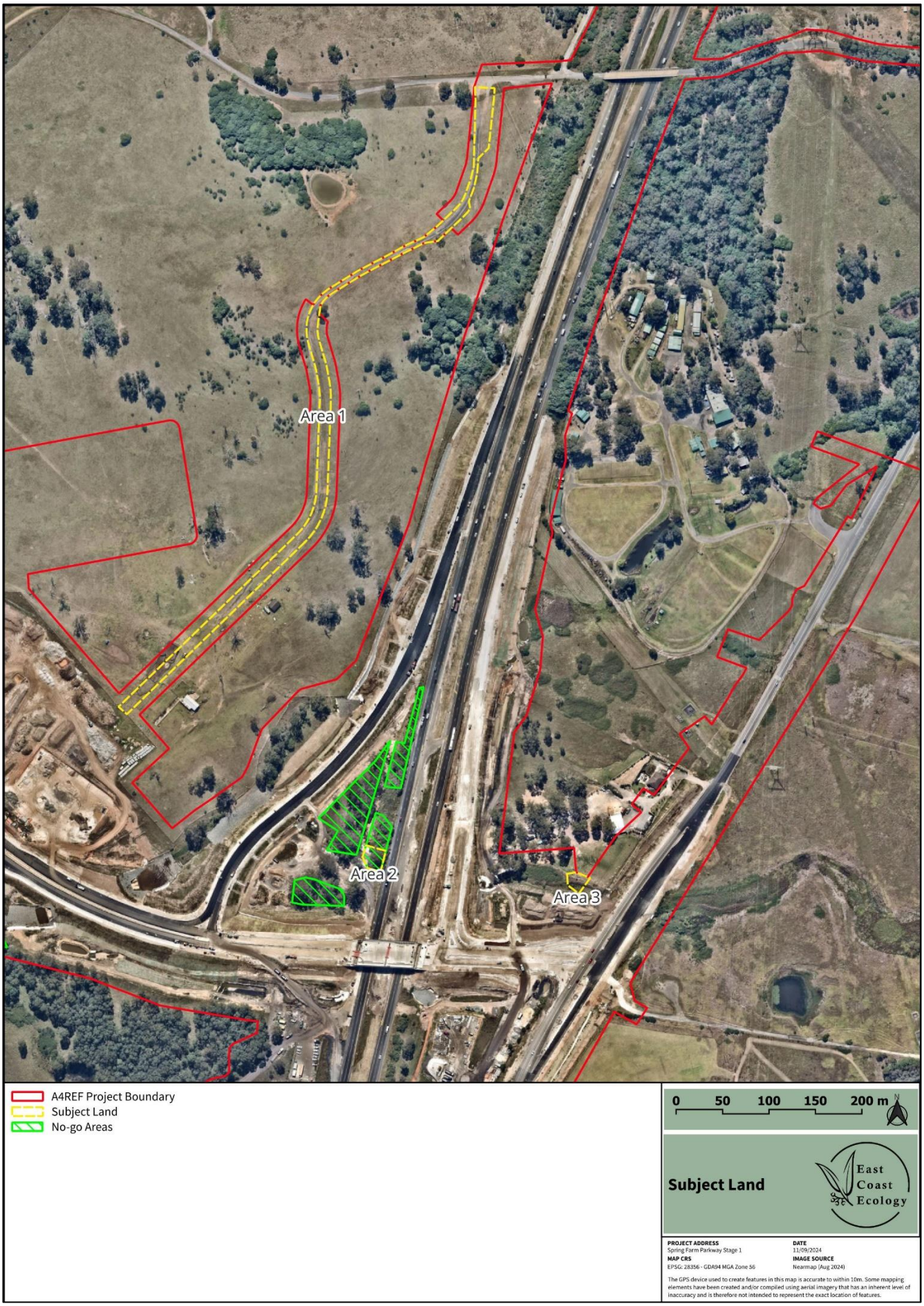

Figure 2. Subject Land.

3. EXISTING INFORMATION (PROJECT REF, A1REF, A2REF, A3REF)

3.1 Vegetation Mapping

Vegetation within the A4REF Project Boundary has been mapped by Niche as part of the previous biodiversity assessments. The Plant Community Types (PCTs) mapped as occurring are detailed in **Table 1** and displayed in **Figure 3**. Descriptions of each PCT and vegetation zone can be found in the A3REF.

Table 1. Plant Community Types recorded in the direct impact area.

PCT	Vegetation Zone	Condition	Threatened Ecological Community	BC Act	EPBC Act
850 - Grey Box - Forest Red Gum grassy woodland on shale of the southern Cumberland Plain, Sydney Basin Bioregion.	Low_DNG	Low condition Derived Native Grassland	Cumberland Plain Woodland in the Sydney Basin Bioregion (CPW)	CE	-
	Low_Grass	Low condition woodland, with grassy understorey		CE	-
	Low_Olive	Low condition woodland dominated by African Olive		CE	-
	Moderate_Bursaria	Moderate condition woodland with native shrub layer		CE	CE
	Moderate_DNG	Moderate condition Derived Native Grassland		CE	-
1800 - Swamp Oak open forest on riverflats of the Cumberland Plain and Hunter valley	Low	Low condition forest	Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin and South East Corner bioregions	E	E
Exotic/ Planted	Exotic – Olive	-	-	-	-
	Exotic Grassland	-	-	-	-
	Planted Vegetation		-	-	-

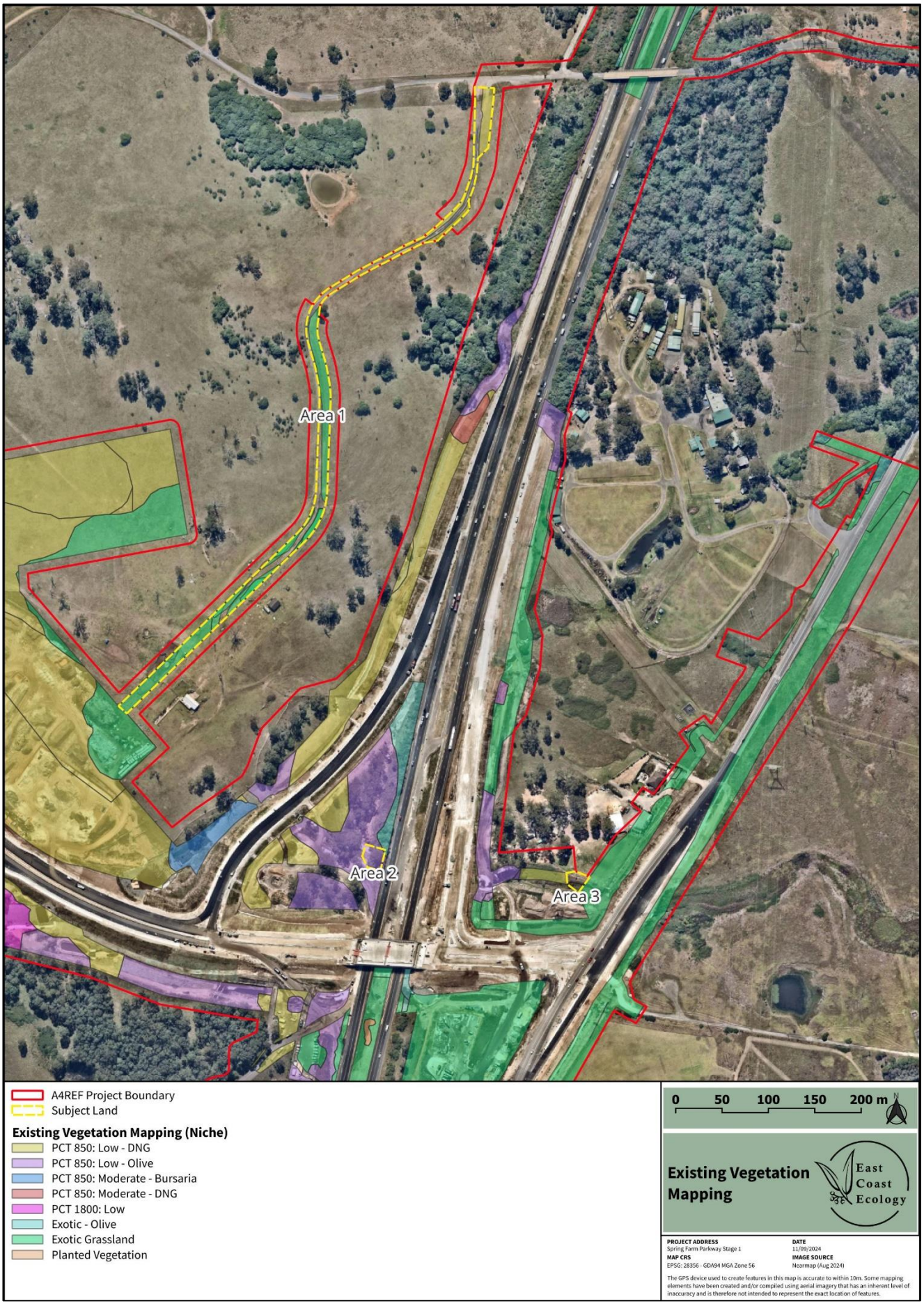

Figure 3. Existing vegetation mapping (Niche).

3.2 Threatened Flora

Given the very small amount of degraded woodland and riparian forest present in the direct impact area, only two threatened flora species/ populations were considered to have a moderate or higher potential to occur: :

- *Marsdenia viridiflora subsp. viridiflora* (Native Pear), listed as an Endangered Population under the BC Act, and
- *Pimelea spicata* (Spiked Rice-flower), listed as Endangered under the BC and EPBC Act.

As potential habitat for these species/ populations was deemed likely, a threatened flora survey targeting both species was undertaken (Niche, 2019).

Marsdenia viridiflora subsp. viridiflora is a conspicuous species and would likely have been recorded during the field survey if the species was present. The species is therefore unlikely to be present within the direct impact area despite having some marginal habitat. The likelihood of impact to the endangered population of *Marsdenia viridiflora subsp. viridiflora* is low, and therefore no further assessment is required.

Pimelea spicata was previously recorded near the Project Boundary during the Niche (2019) field campaign, however the species was not recorded in the direct impact area. It was also not recorded during the subsequent field campaigns. *Pimelea spicata* is however known to occur within degraded habitat that once supported CPW (DEC, 2006). This species was considered for further assessment in Appendix 4 and 5 in the A2REF.

3.3 Threatened Fauna

No threatened fauna were observed during the 2021 or 2022 surveys (see Appendix 3 in the A2REF for a fauna species list). However, five threatened species were recorded during the 2019 surveys (Niche, 2019), including: Little Lorikeet (*Glossopsitta pusilla*), Little Eagle (*Hieraaetus morphnoides*), Grey-headed Flying-fox (*Pteropus poliocephalus*), Eastern Freetail-bat (*Micronomus norfolkensis*) and Greater Broad-nosed Bat (*Scoteanax rueppellii*).

A total of 53 hollow-bearing trees (HBTs) have previously been recorded within the Project Boundary (Niche, 2019, 2021). Of the 53, the proposal will remove 21 HBTs (8 of which are stags).

3.4 Aquatic Habitat

There would be minimal earthworks associated with the proposed modification in addition to those described in the Project REF and the A1REF. This biodiversity assessment considers the increase in the disturbance footprint across the project and the associated aquatic biodiversity impacts of that work. Construction of the approved project in proximity to watercourses would impact on water quality due to disturbance of bed and banks resulting in erosion, sedimentation and alteration of downstream flows and scouring of the bed near culvert inlets and outlets. Removal of vegetation, stripping of topsoil and sediment associated with general earth works can impact on water quality during construction if runoff is allowed to mobilise exposed soils, particularly when these sites are located close to waterways. Construction activities adjacent to waterways could introduce contaminants such as oil or greases and disturb contaminated sediments, potentially having an adverse impact on water quality.

Potential impacts to aquatic habitats through sedimentation and run-off from construction impacts will mitigated and managed through the Construction Environmental Management Plan (CEMP).

As per the NSW DPI Policy and Guidelines for fish habitat, under section 199 of the *Fisheries Management Act 1994*, the Minister for Agriculture is to be consulted over any dredging or reclamation works carried out, or proposed to be authorised, by a public authority (other than a local government authority) (i.e. any excavation within, or filling or draining of, water land or the removal of woody debris, snags, rocks or freshwater native aquatic vegetation or the removal of any other material from water land that disturbs, moves or harms these in-stream habitats). A Part 7 Fisheries Management Act Permit may also be required.

4. FIELD SURVEY

A survey of the Subject Land was undertaken by ECE Ecologists Jade Minto and Ethan Dean on 27th August 2024. The survey involved:

- Verifying the existing vegetation mapping
- Traversing the Subject Land and immediate surrounds searching for suitable habitat for threatened species including:
    - Hollow-bearing trees and stick nests
    - Coarse woody debris
    - Thick leaf litter
    - Crevices, culverts and bridges
    - Burrows
    - Bushrock
- Identifying areas of weed infestation
- Estimating the number of trees that require removal
- Qualitative assessment of the condition of the vegetation, and
- Identifying areas of potential foraging habitat for threatened fauna.

5. RESULTS: VEGETATION CONDITION

Vegetation within the Subject Land was determined to be consistent with three vegetation zones (and TEC) identified in the A3REF (**Figure 4**):

- Exotic Grassland:
    - Area 1 = 4,760m^2
- PCT 850: Low_Olive:
    - Area 2 = 384m^2
- PCT 850: Low_DNG:
    - Area 1 = 1,419m^2
    - Area 3 = 350m^2

Vegetation within Area 1 could not be accessed during the August 2024 field survey so existing vegetation mapping (Niche) was used. The condition of the vegetation within the surveyed areas of the Subject Land was determined to be low and does not meet the condition threshold for listing as the EPBC Act community - Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest (DEWHA, 2009). A Test of Significance (BC Act) (ToS) for CPW have been undertaken in Appendix 4 of the A2REF. The result of the ToS is that a significant impact was not likely.

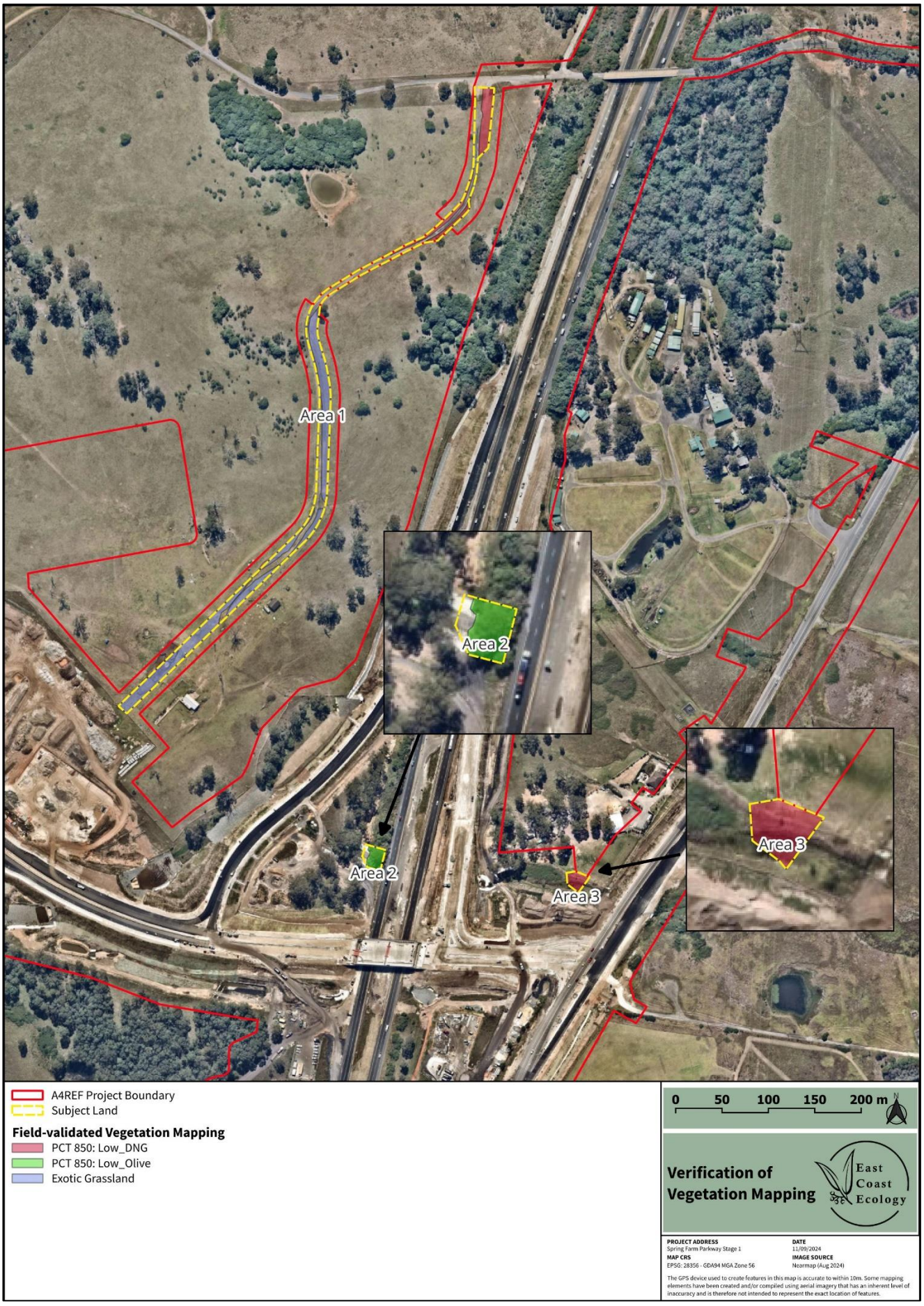

Figure 4. Verification of existing vegetation mapping.

6. RESULTS: THREATENED SPECIES AND THEIR HABITAT

A review of updated threatened flora spatial records (NSW DCCEEW, 2024c) returned three additional species to the initial search undertaken by Niche (2019). These species were:

- *Epacris purpurascens var. purpurascens* - Vulnerable BC Act
- *Eucalyptus nicholii* (Narrow-leaved Black Peppermint) – Vulnerable BC and EPBC Act, and
- *Eucalyptus* sp. Cattai – Critically Endangered BC and EPBC Act.

The likelihood of occurrence of these additional threatened species has been assessed in **Appendix A**, with the and it was determined that each species had a 'low' likelihood of occurrence within the Subject Land. No other threatened flora species were considered likely to occur within the Subject Land.

The review of updated threatened fauna spatial records (NSW DCCEEW, 2024c) returned one additional species to the initial search undertaken by Niche (2019). This species was:

- *Pycnoptilus floccosus* (Pilotbird) - Vulnerable BC and EPBC Act.

The likelihood of occurrence of this additional threatened species has been assessed in **Appendix A**, with the results showing it is 'unlikely' to occur within the Subject Land. Targeted surveys for *Meridolum corneovirens* (Cumberland Plain Land Snail) within Area 2 and Area 3 of the Subject Land did not detect this species. No other threatened fauna species were considered likely to occur within the Subject Land.

No threatened species were detected during the field survey undertaken in August 2024. Area 2 within the Subject Land provided potential, low-quality foraging habitat for highly mobile threatened fauna in the form of a flowering eucalypt and exotic African Olives. Wet areas within and adjacent to the Subject Land could provide habitat for protected frogs. No areas of dense leaf litter were recorded within the Subject Land. No hollow-bearing trees were identified within the Subject Land.

A ToS and AoS have been undertaken in Appendix 4 and Appendix 5 of the A2REF. Subject to the implementation of the mitigation measures provided in the Project REF, Recommendations section below, and CEMP for the project, are followed, the ToS and AoS determined that a significant impact is not likely.

7. OFFSET STRATEGY

This section describes if residual impacts from the proposal, after avoidance or mitigation, would trigger the need for offsetting, in accordance with RMS Biodiversity Offset Guidelines (RMS, 2016). Transport will provide biodiversity offsets, or where offsets are not reasonable or feasible, supplementary measures for impacts that exceed the thresholds detailed in **Table 2** (RMS, 2016).

Table 2. Offsetting thresholds for REFs (RMS, 2016).

Description of activity or impact	Consider offsets or supplementary measures
Activities in accordance with Transport Environmental assessment procedure: Routine and Minor Works (RTA, 2011)	No

Description of activity or impact	Consider offsets or supplementary measures
Works on cleared land, plantations, exotic vegetation where there are no threatened species or habitat present	No
Works involving clearing of vegetation planted as part of a road corridor landscaping program (this includes where threatened species or species comprising listed ecological communities have been used for landscaping purposes)	No
Works involving clearing of national or NSW listed critically endangered ecological communities (CEEC)	Where there is any clearing of an CEEC in moderate to good condition
Works involving clearing of nationally listed threatened ecological community (TEC) or nationally listed threatened species habitat	Where clearing >1ha of a TEC or habitat in moderate to good condition
Works involving clearing of NSW endangered or vulnerable ecological community	Where clearing >5ha or where the ecological community is subject to an SIS
Works involving clearing of NSW listed threatened species habitat where the species is a species credit species as defined in the OEH Threatened Species Profile Database (TSPD)	Where clearing >1ha or where the species is the subject of an SIS
Works involving clearing of NSW listed threatened species habitat and the species is an ecosystem credit species as defined in OEH's Threatened Species Profile Database (TSPD)	Where clearing >5ha or where the species is the subject of an SIS

The Project REF (Niche, 2019) applied the Guidelines (RMS, 2016) for the initial offset strategy and used the BAM Calculator to determine the credits required to offset the impacts to the CEEC Cumberland Plain Woodland. Further clarity around the definition of 'moderate to good' condition has since been provided from Transport, referring to definitions in the NSW Biodiversity Offsets Policy for Major Projects: Framework for Biodiversity Assessment (the Framework) (OEH, 2014). The Framework classifies 'Low' condition vegetation as the following:

- Woody native vegetation with native over-storey percent foliage cover less than 25% of the lower value of the over-storey percent foliage cover benchmark for that vegetation type, and where either:
    - Less than 50% of ground cover vegetation is indigenous species, or
    - Greater than 90% of ground cover vegetation is cleared.

The Framework considers 'native vegetation that is not in low condition is in moderate to good condition' (OEH, 2014). As described in A3REF, PCT 850: Low_DNG and PCT 850: Low_Olive are both considered to be in low condition and do not require offsetting. Cumberland Plain Land Snail was not detected during targeted surveys and is not considered for offsetting.

8. RECOMMENDATIONS

The recommendations made in the Project REF, A1REF, A2REF and A3REF, and the CEMP that was prepared for the overall project, should be adopted within the direct impact area to minimise potential impacts on biodiversity, including:

- Implementation of staged vegetation removal, with clearing of the non-habitat vegetation occurring at least 24 hours prior to removing habitat vegetation
- Works in the vicinity of the waterways would occur during dry periods, where possible, to prevent soil compression, bank slumping, soil erosion and sediment laden runoff from entering the waterway
- Sediment and erosion controls would be installed around the perimeter of all soil disturbance and the proposed waterway crossing to reduce potential soil erosion and sediment laden runoff from entering the waterway or affecting nearby native vegetation
- Ensure machinery is clean and free of introduced plant seeds prior to activities on site. Under the *Biosecurity Act 2015* (NSW) there are recommended measures for removal of weed species within the Greater Sydney region. Woody weed species require removal from site and are not to be mulched onsite
    - "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."
- Measures to prevent the spread of Chytrid fungus would be employed in accordance with the Hygiene protocol for the control of disease in frogs (DSEWPC, 2011).

9. CONCLUSION

The proposed modification will result in changes to the overall amount of vegetation to be impacted by the project (**Table 3**).

Table 3. Direct impacts to vegetation.

PCT and Vegetation Zone	A3REF and Project REF Cumulative (ha)	A4REF Remove	A4REF Retain	Total
PCT 850: Low_DNG	8.29	350m^2	1,419m^2	8.18ha
PCT 850: Low_Olive	3.61	384m^2	0	3.65ha

The overall impact to CPW has reduced by 0.07ha, therefore the conclusion in the ToS for CPW in the A2REF remains the same- the proposal is not likely to result in a significant impact on the local occurrence of CPW. Area 2 is located within a No-Go Area that was previously implemented to reduce the impact of the proposal. The vegetation within Area 2 was severely degraded owing to an infestation of African Olive and it provides negligible habitat for threatened species. The potential impacts to threatened biodiversity within the direct impact area have been assessed against the Commonwealth and NSW statutory framework with the conclusion that a significant impact to a threatened species, population or community is unlikely.

No additional offsets to those described in the A3REF will be required for the proposed modification.

Recommendations have been provided to reduce risk of impacts to the biodiversity values in the direct impact area and, if adhered to, will minimise impacts to biodiversity in the locality.

If you have any queries, please feel free to contact me.

Sincerely,

Dr Jack Tatler
Director/ Principal Ecologist - Accredited Biodiversity Assessor
(BAAS21006)

10. References

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Roads and Traffic Authority (RTA) (2011). Biodiversity Guidelines: Protecting and managing biodiversity on RTA proposals.

Transport for NSW (TfNSW) (2024) Biodiversity Management Guideline Protecting and managing biodiversity on Transport for NSW projects

Appendix A. Habitat suitability assessment.

Scientific name	Status		BAM credit type	Habitat constraints and/or geographic limitations	Distribution and habitat	Number of records (source)	Likelihood of occurrence
	BC Act	EPBC Act					
Plants							
Epacris purpurascens var. purpurascens	V	-	Species	-	Recorded from Gosford in the north, to Narrabeen in the east, Silverdale in the west and Avon Dam vicinity in the South. Found in a range of habitat types, most of which have a strong shale soil influence.	1 - BioNet	Low. There is only 1 record from 2010 that is >7km from the Project Boundary. No *Epacris* spp. were recorded during the field survey and the habitat is sufficiently degraded such that this species is unlikely to occur.
Eucalyptus nicholii (Narrow-leaved Black Peppermint)	V	V	Species	-	Typically grows in dry grassy woodland, on shallow soils of slopes and ridges. Found primarily on infertile soils derived from granite or metasedimentary rock. Seedling recruitment is common, even in disturbed soils, if protected from grazing and fire.	1 - BioNet	Unlikely. There is only 1 record from 2005 that is >8km from the Project Boundary. This species does not occur naturally in Sydney.
Eucalyptus sp. Cattai	CE	CE	Species	-	Occurs as a rare emergent tree in scrub, heath and low woodland on sandy soils, usually as isolated individuals or occasionally in small clustered groups. The sites at which it occurs are generally flat and on ridge tops. Associated soils are laterised clays overlying sandstone. There	30 - BioNet	Low. The nearest records of this species are >7km from the Project Boundary. This species was not recorded during the field survey.

Scientific name	Status		BAM credit type	Habitat constraints and/or geographic limitations	Distribution and habitat	Number of records (source)	Likelihood of occurrence
	BC Act	EPBC Act					
					are no known populations occur in conservation reserves.		
Birds							
Pycnoptilus floccosus (Pilotbird)	-	V	-	-	Pilotbirds are endemic to south-east Australia. Upland Pilotbirds occur above 600 m in the Brindabella Ranges in the Australian Capital Territory, and in the Snowy Mountains in New South Wales and north-east Victoria (Higgins & Peter 2002; Loyn et al. 2021). Lowland Pilotbirds occur in forests from the Blue Mountains west of Newcastle, around the wetter forests of eastern Australia, to Dandenong near Melbourne (Higgins & Peter 2002; Loyn et al. 2021). Pilotbirds are strictly terrestrial, living on the ground in dense forests with heavy undergrowth (Higgins & Peter 2002).	10 - BioNet	Unlikely. There is no suitable habitat for this species within the Project Boundary.

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Appendix D

Aboriginal Heritage Impact Management System (AHIMS) search results

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : SFP AREF4

Client Service ID : 930117

bd infrastructure

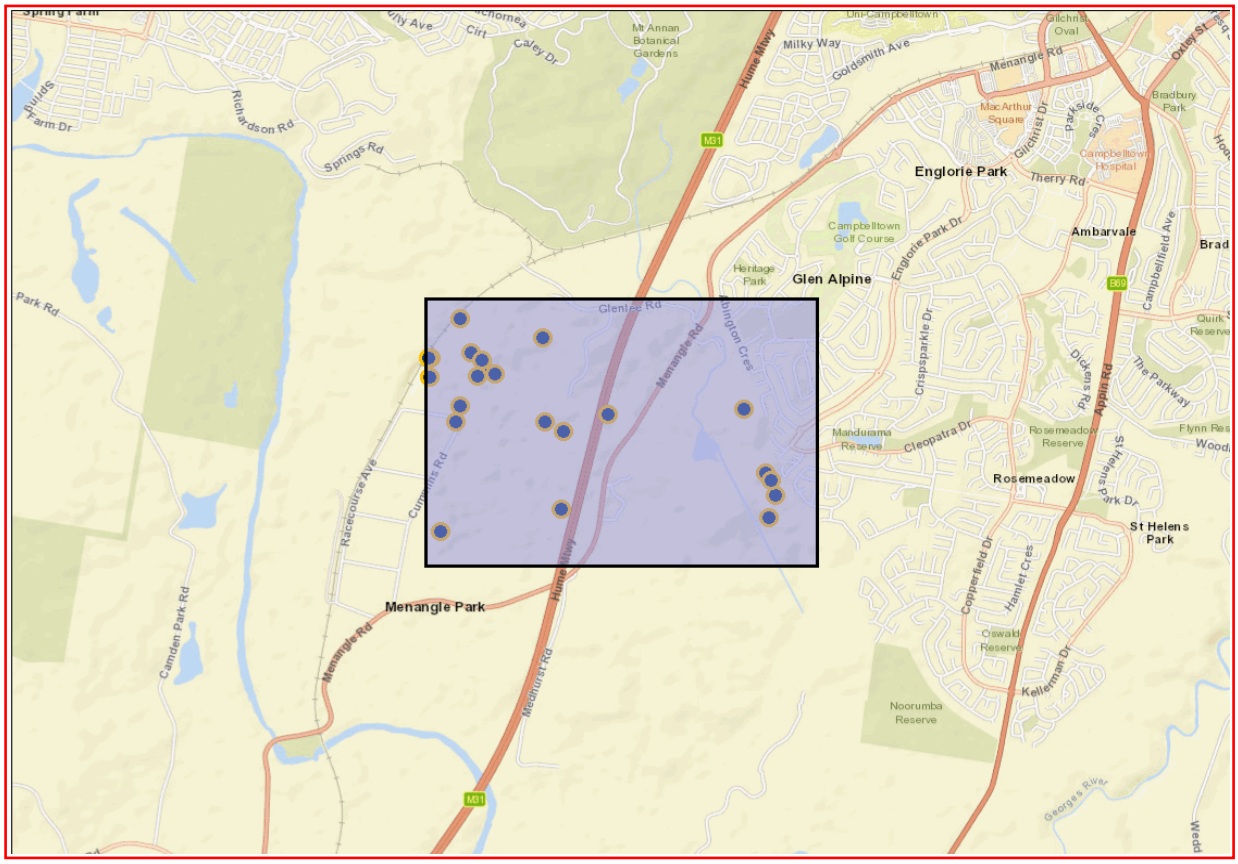
Date: 12 September 2024

Suite 7.03, Level 7 45 Clarence Street
Sydney New South Wales 2000
Attention: Nicole Cook

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lat, Long From : -34.1058, 150.7515 - Lat, Long To : -34.088, 150.7824, conducted by Nicole Cook on 12 September 2024.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

22	**Aboriginal sites are recorded in or near the above location.**
0	**Aboriginal places have been declared in or near the above location. ***

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

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NSW GOVERNMENT