

ADDENDUM REVIEW OF ENVIRONMENTAL FACTORS

PREPARED UNDER PART 5.1 OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

ASSESSMENT OF ENVIRONMENTAL EFFECTS FOR THE SETTLERS ROAD LANDSLIDE REMEDIATION



Document Revision History			PROJECT NO.		
ISSUE	DATE	ISSUE DETAILS / REMARKS	AUTHOR	CHECKED	APPROVED
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Rev 00	10/01/2024	Issued for external review	A. Broger	C. Weller	
Rev 01	17/01/2024	Issued for external review and determination.	A. Broger	C. Weller	

REF publication decision checklist

<p>1. Is the REF exempt from being published (under s171(6) of the EP&A Regulation)? That is, does the work involve:</p> <ul style="list-style-type: none"> • Sensitive government infrastructure (critical infrastructure asset) • Sensitive government information (early works for projects that are confidential) <p>If 'no', continue to the checklist below.</p> <p>If 'yes', publishing of the REF is not required.</p>	Yes	No <input checked="" type="checkbox"/>
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If the answer to any of the questions below is “yes”, the review of environmental factors must be published. See instructions for how to publish the REF below.

<p>1. Is the value of the work more than \$5 million? For guidance on calculating the CIV see link: Calculation of capital investment value</p>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<p>2. Is the work likely to need any of the following permits or approvals before it may be carried out?</p>		
Aquaculture permit (s144 <i>Fisheries Management Act 1994</i>)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Permit to harm marine vegetation (s205 <i>Fisheries Management Act 1994</i>)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Permit to block fish passage (s219 <i>Fisheries Management Act 1994</i>)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Approval for work on a state heritage listing or interim heritage order (s57 <i>Heritage Act 1977</i> (where an application for approval is to be made under s60))	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Aboriginal heritage impact permit (s90 <i>National Parks and Wildlife Act 1974</i>)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Environment protection licence for scheduled activity (premises or non-premises based) (s48 and s49 <i>Protection of the Environment Operations Act 1997</i>)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Environment protection licence for non-scheduled activities to regulate water pollution (s122 <i>Protection of the Environment Operations Act 1997</i>)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
<p>3. Would the public have an interest in the work? (s171(4)(c) of EP&A Regulation) Note 1: The following questions are provided as a guide to help decide whether it is in the public interest to publish the REF. Note 2: If needed, seek guidance from the Communications and Engagement team.</p>		
<p>a) Has the work, issue or project been reported in the media?</p> <p>b) Is the work part of a political announcement, project or initiative?</p> <p>c) Could the work change the landscape character or visual amenity of a place permanently? (more than a minor change)</p> <p>d) Does the work change access, traffic movements or parking for residents, businesses or a community facility?</p> <p>e) Does the work change the visibility of a business or a community facility? (more than a minor change)</p> <p>f) For rail activities, does the work involve a change in the listing of an item of local environmental heritage? Or for all other activities, does the work involve permanent and more than a minor change to an item of local environmental heritage?</p>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

ⁱ Additional approvals or permits listed in s171(4) that do not generally apply to Transport for NSW (for which publication of an REF would be required):

- Permit to carry out dredging or reclamation by a local government authority (s200 *Fisheries Management Act 1994*)
- Environment protection licence for scheduled development work (s47 *Protection of the Environment Operations Act 1997*)
- Forestry operation carried out in accordance with an integrated forestry operations approval or authorised private native forestry plan (s122 *Protection of the Environment Operations Act 1997*)

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National Parks and Wildlife Service navigation matrix

The following table has been developed to assist National Parks and Wildlife Service (NPWS) in navigating the combined Transport and NPWS template. The table summarises how each of the chapters of this REF links with each of the chapters in the NPWS Standard REF template.

Chapter #	NPWS Chapter	Where addressed in this REF
1	Brief description of the proposed activity	Chapter 1.1 and 3 Description of the proposed modification
2	Proponent's details	Pg. 4
3	Permissibility and assessment pathway	Chapter 4 Statutory and Planning Framework
3.1	Permissibility under NSW legislation	Chapter 4.2 State Legislation and Planning Policy
3.1.1	<i>National Parks and Wildlife Act 1974 (NPW Act) and NPW Regulation</i>	Chapter 4.2.5 <i>National Parks and Wildlife Act 1974 (NPW Act)</i>
3.1.2	<i>Wilderness Act 1987</i> (for activities in wilderness areas)	Chapter 4.2.10 <i>NSW Wilderness Act 1987</i>
3.1.3	<i>Biodiversity Conservation Act 2016 (BC Act)</i>	Chapter 4.2.4 <i>Biodiversity Conservation Act 2016 (BC Act)</i>
3.1.4	<i>Rural Fires Act 1997 (RF Act)</i>	Chapter 4.2.11 <i>Rural Fires Act 1997 (RF Act)</i>
3.2	<i>Environmental Planning and Assessment Act 1979</i>	Chapter 1.2 Purpose of the report Chapter 4.2.1 <i>Environmental Planning and Assessment Act 1979</i>
3.2.1	Assessment pathway	Chapter 1.2 Purpose of the report Chapter 4.2.1 <i>Environmental Planning and Assessment Act 1979</i>
3.2.2	Strategic plans	Chapter 2.1 Strategic need for the proposal
3.3	Other relevant NSW legislation	Chapter 4.2 Other relevant NSW legislation
3.3.1	<i>Coal Mine Subsidence Compensation Act 2017</i>	Not applicable for this proposal
3.3.2	<i>Fisheries Management Act 1994</i>	Chapter 4.2.6 <i>Fisheries Management Act 1994</i>
3.3.3	<i>Heritage Act 1977</i>	Chapter 4.2.7 <i>Heritage Act 1977</i>
3.3.4	<i>Marine Estate Management Act 2014</i>	Not applicable for this proposal
3.4	Does Commonwealth legislation apply?	Chapter 4.1 Commonwealth legislation
3.5	Consistency with NPWS policy	Chapter 4.2.5 <i>National Parks and Wildlife Act 1974 (NPW Act)</i>
3.6	Summary of licences and approvals	Chapter 7.3 Licensing and approvals
3.6.1	Approval under the National Parks and Wildlife Act	Not applicable for this proposal
3.6.2	Other approvals	No other approvals required
3.6.3	Publication triggers	Page 3
4	Consultation – general	Chapter 5 Consultation
4.1	Consultation required under Transport and Infrastructure State Environmental Planning Policy	Chapter 4.2.2.1 SEPP (Transport and Infrastructure) consultation and 5.1.1.1
4.2	Consultation requirements under National Parks and Wildlife Act for leases and licences	Not applicable for this proposal
4.3	Targeted consultation including adjacent landowners (4.3.1), wider community consultation and/or notification or works (4.3.2), and interest groups and/or notifications (4.3.3)	Chapter 5 Consultation
5	Consultation – Aboriginal communities	Chapter 5 Consultation
5.1	Native title notification requirements	Chapter 4.1.2 <i>Native Title Act 1993</i>

Chapter #	NPWS Chapter	Where addressed in this REF
5.2	Parks under other joint management arrangements	Not applicable for this proposal
5.3	Other parks	Not applicable for this proposal
6	Proposed activity (or activities)	Chapter 1.1 and 3 Description of the proposed modification
6.1	Location of activity	Chapter 1.1 and 3 Description of the proposed modification
6.2	Description of the proposed activity	Chapter 3.2.1 Construction activities
7	Reasons for the activity and consideration of alternatives	Chapter 2 Options considered
7.1	Objectives and reasons for the proposal	Chapter 2.1.1 Proposal objectives and development criteria
7.2	Consideration of alternatives	Chapter 2.2 Options considered
7.3	Justification of preferred option	Chapter 2.2 Options considered
7.4	Site suitability	Not applicable for this proposal
8	Description of the existing environment	Chapter 6 Environmental assessment
8.1	Overview of the project area	Chapter 1.1 Description of Existing Environment and 1.5 Proposal Description
8.2	Natural values	See below
8.2.1	Geology, geomorphology and topography	Chapter 6.2 Existing environment for soil types and properties under the Soil and surface water chapter
8.2.2	Soil types and properties (including contamination)	Chapter 6.2 Existing environment for soil types and properties under the Soil and surface water chapter
8.2.3	Watercourses, waterbodies and wetlands (including their catchment values)	Chapter 6.2 Existing environment for soil types and properties under the Soil and surface water chapter
8.2.4	Coasts and estuaries	Not applicable for this proposal
8.2.5	Biodiversity	Chapter 6.1 Existing environment under the Biodiversity assessment chapter
8.3	Cultural values	See below
8.3.1	Aboriginal cultural heritage	Chapter 6.4 Existing environment and potential impacts under Other impacts and Appendix D
8.3.2	Historic heritage values	Chapter 6.4 Existing environment and potential impacts under Other impacts
8.4	Social values	Chapter 6.4 Existing environment and potential impacts under Other impacts
8.5	Matters of National Environmental Significance	Chapter 4.1.1
9	Impact assessment	Chapter 6 Environmental assessment
9.1	Physical and chemical impacts during all stages of the activity	Chapter 6 Environmental assessment
9.2	Biodiversity impacts during all stages of the activity	Chapter 6.1 Existing environment under the flora and fauna assessment chapter
9.3	Community impacts during all stages of the activity	Chapter 6.4 Other impacts
9.4	Natural resource impacts during all stages of the activity	Chapter 6.4 Other impacts
9.5	Aboriginal cultural heritage impacts during all stages of the activity	Chapter 6.4 Other impacts and Appendix D
9.6	Other cultural heritage impacts during all stages of the activity	Chapter 4.4 Other impacts

Chapter #	NPWS Chapter	Where addressed in this REF
9.7	Impacts on matters of national environmental significance under the Environment Protection and Biodiversity Conservation Act during all stages of the activity	Chapter 4.1.1 Error! Reference source not found.
9.8	Cumulative impacts during all stages of the activity	Chapter 4.4 Other impact
10	Proposals requiring additional information	Not applicable for this proposal
11	Summary of impacts and conclusions	Chapter 8 Error! Reference source not found.
12	Supporting documentation	Refer to the table of contents for a full list of Appendices/attachments
13	Fees for external proponents	Not applicable for this proposal
14	Declarations	Chapter 9 Certification
Appendix D	Threatened species tests of significance	Appendix B

1 Introduction

1.1 Proposed modification overview

A Review of Environmental Factors (REF) was prepared for the Settlers Road Landslide Remediation project in August 2023 (referred to in this REF as the project REF). Following detailed design of the remedial works in the project REF, it was highlighted that a previously overlooked landslide approximately 200m to south-east (towards Wisemans Ferry) also required remediation in order to reopen Settlers Road to its pre-existing condition and with an acceptable risk level. The Central Coast Council proposes to modify the Settlers Road Landslide Remediation project by completing additional remedial works on Settlers Road. Key features of the proposed modification would include:

- Site establishment works to allow for safe access, including any stabilisation required.
- Removal of damaged vegetation along the slope, scaling of loose rock and unstable material
- Excavation works to cut back colluvial slope
-
- Roadway finishing and pavement works.

The location of the proposed modification is shown in Figure 1-1 and Figure 1-3, with Chapter 3 describing the modification in more detail.



Figure 1-1 Proposed modification location

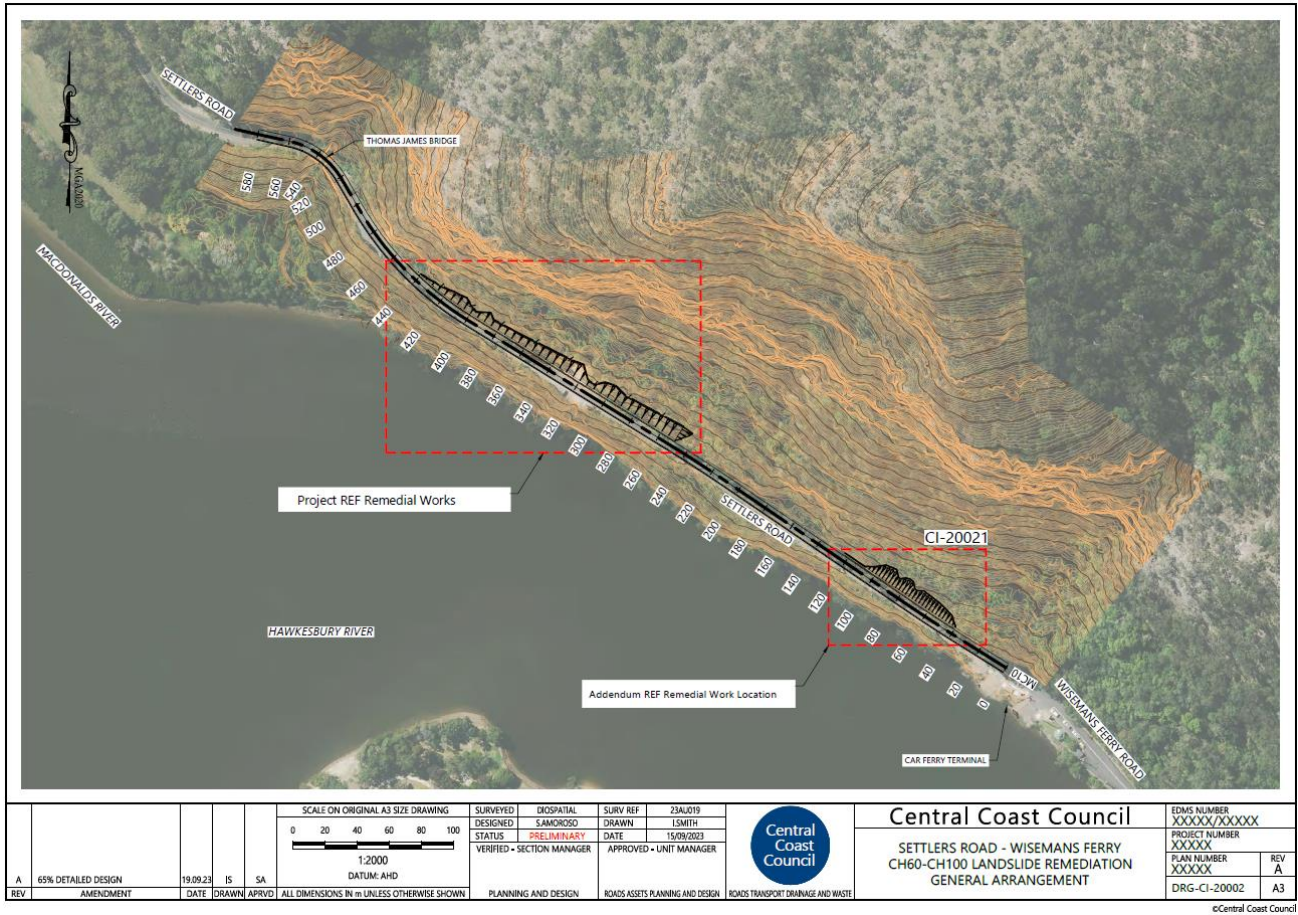


Figure 1-2 Proposed modification and project REF location

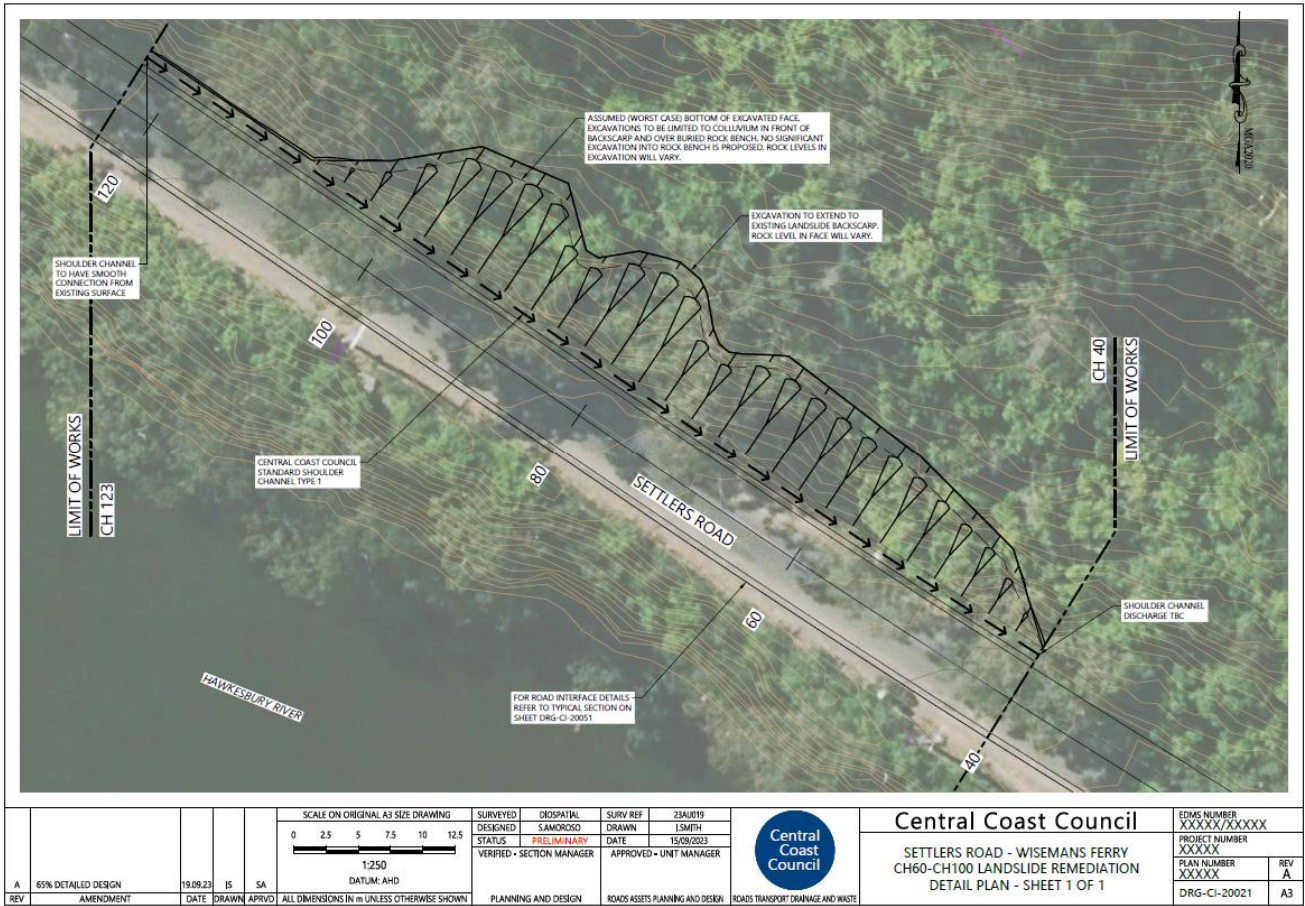


Figure 1-3 Proposed modification concept design

1.2 Purpose of the report

This addendum REF has been prepared by Hutchison Weller Pty Ltd on behalf of the Central Coast Council. For the purposes of these works, Central Coast Council (CCC) 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. The purpose of this addendum REF is to describe the proposed modification, to document and assess the likely impacts of the proposed modification on the environment, and to detail mitigation and management measures to be implemented.

The description of the proposed work and assessment of associated environmental impacts has been undertaken in context of Part 8 of the *Environmental Planning and Assessment Regulation 2021, Guidelines for Division 5.1 assessments (DPE, 2022)* 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 CCC 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 and Public Spaces under Division 5.2 of the EP&A Act
- The significance of any impact on threatened species as defined by the BC Act and/or FM Act, in section 1.7 of the EP&A Act and therefore the requirement for a Species Impact Statement or a Biodiversity Development Assessment Report
- The significance of any impact on nationally listed biodiversity matters under the EPBC Act, including whether there is a real possibility that the activity may threaten long-term survival of these matters, and whether offsets are required and able to be secured
- The potential for the 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 Government Department of Agriculture, Water and the Environment 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 proposal

Chapter of 1 of the project REF addresses the strategic need for the project, the project objectives and the options that were considered. The proposed modification described and assessed in this addendum REF is consistent with the strategic need for the project.

Settlers Road is a significant stretch of road for the local community that allows access north-east of Wisemans Ferry all the way to St Albans. St Albans Bridge has a load limit of 15t with only one heavy vehicle permitted on the Bridge at one time. Settlers Road is not subject to such load limits, and therefore is the main route for heavy vehicles travelling north-west of Wisemans Ferry.

The Hawkesbury and Central Coast Local Government Areas faced their worst flooding in 60 years in March 2022. Central Coast Council proposes to remediate a section of Settlers Road that was damaged by a serious landslide during the severe weather event. Since early 2022 the flood damaged Settlers Road has been subject to load limits and traffic controls which has delayed road users and impeded the use of the road.

The remediation of Settlers Road is essential to maintain access for the community north of Wisemans Ferry, when this bridge is not accessible, travel times increase by about an hour. The existing landslip site was rated as the highest priority (i.e., most critical) site in a recent site prioritisation report (GHD 2022) of some 41 landslide sites along a 23.9 km length of Settlers Road and Wisemans Ferry Road between Wisemans Ferry and Spencer. As such, remediation is required to aid in the reinstatement of Settlers Road to its former condition and capacity.

2.1.1 Objectives of the Proposal

The objectives of the proposal are to:

- Remediate road infrastructure.
- Remediate the slope with consideration of the ecological values of the region.
- Minimise environmental impact.
- Ensure safe working environment for all project staff.

2.1.2 Limitations of existing infrastructure

Due to severe wet weather over the last several years the slope subject to this report experienced failures. The slope is at risk of failing further if remediation solutions are not applied.

2.2 Options considered

The landslips discussed in the project REF and addendum REF are both in close proximity and of a similar nature. This allows for the use of similar remedial design solutions for both sites. For this reason, an options assessment similar to that undertaken in the project REF was not replicated for the proposed modification and a remedial design solution consistent with Option 4 in the project REF has been progressed to a concept level. The options considered are:

- Option 1: 'Do nothing'
- Option 2: Excavation of landslide debris to a potential buried cliff line.
- Option 3: Excavation of all landslide debris to the backscarp of the landslide.

Option number	Concept	Advantages	Disadvantage
Option 1	'Do nothing	No additional environmental impacts associated with construction would result. No costs and therefore no funding required.	The objectives of the proposed works would not be achieved. The slope would not be repaired and would continue to operate at a reduced capacity.

Option number	Concept	Advantages	Disadvantage
			Residents would continue to be impacted by traffic control safety measures on the road. There would be a high risk of failure especially in future heavy rain events.
Option 2	Excavation of landslide debris to a potential buried cliff line.	Reduced excavation volume. Reduced cost compared with Option 3 (unless a soil nail wall is required).	High risk of not encountering rock bench / low cliff line, resulting in increased excavation and / or the need for a soil nail wall. If rock is not encountered and a soil nail wall is required, longer soil nail than Option 1B would be necessary, largely negating the cost savings afforded by reduced volumes of excavation. Likely need for a rock catch and / or landslide debris fence (similar to CH250 to CH450) based on rockfall modelling.
Option 3	Excavation of all landslide debris to the backscarp of the landslide.	Low risk option – exaction extents are known and won't vary. Removes all landslide debris – no need for a landslide debris fence. No need for a rock catch fence – modelling shows rock will fall safely in the excavation catch zone.	Larger volume of excavation compared to Option 1. Likely more expense option (subject to conditions encountered during excavation). Extents of soil nail wall remains unknown – subject to thickness of colluvium exposed in excavation.

The preferred option and justification:

Option 3 has been chosen as the preferred option over Option 1 and 2 due to:

- The damaged area will require remediation to restore full capacity to the roadway and reduce the risk of further damage. This option would remediate the damage while also offering protection against future landslides along a greater portion of Settlers Road.
- Uncertainties relating to the presence of the potential rock bench / lower level cliff line.
- Timing and cost efficiencies.
- Option 3 would achieve all objectives of the proposed work.

3 Description of the proposed modification

3.1 The proposed modification

Following detailed design of the remedial works in the project REF, it was highlighted that a previously overlooked landslide approximately 200m to south-east (towards Wisemans Ferry) also required remediation in order to reopen Settlers Road to its pre-existing condition and with an acceptable risk level. The Central Coast Council proposes to modify the Settlers Road Landslide Remediation project by including an additional section of remedial works on Settlers Road. Key features of the proposed modification would include:

- Site establishment works to allow for safe access, including any stabilisation required.
- Removal of damaged vegetation along the slope, scaling of loose rock and unstable material
- Excavation works to cut back colluvial slope
- Roadway finishing and pavement works.

The location of the proposed modification is shown in Figure 1-1 and Figure 1-3.

3.1.1 Background

The Hawkesbury and Central Coast Local Government Areas faced their worst flooding in 60 years in March 2022. The Councils intend to carry out remediation work to the uphill slope along Settlers Road which was damaged as a result of the early 2022 flooding.

The uphill slope has undergone significant collapse as a direct result of increased soil saturation from the 2022 'La Niña' event. The particularly heavy rainfall event in late February/early March 2022 appears to have triggered the landslide. The landslide has been monitored at a high level for further movement after the slip. However, it can be presumed that at some point without remediation there will be further collapse affecting the amenity of the road, with a high possibility that the road will be unsafe for vehicular access.

Settlers Road is a critical access point for residents, when this road is not accessible, travel times increase by about an hour. The slope will require remediation to stabilise and reinstate full use of the road. Figure 3-1 to Figure 3-3 show the existing damage to the roadway.

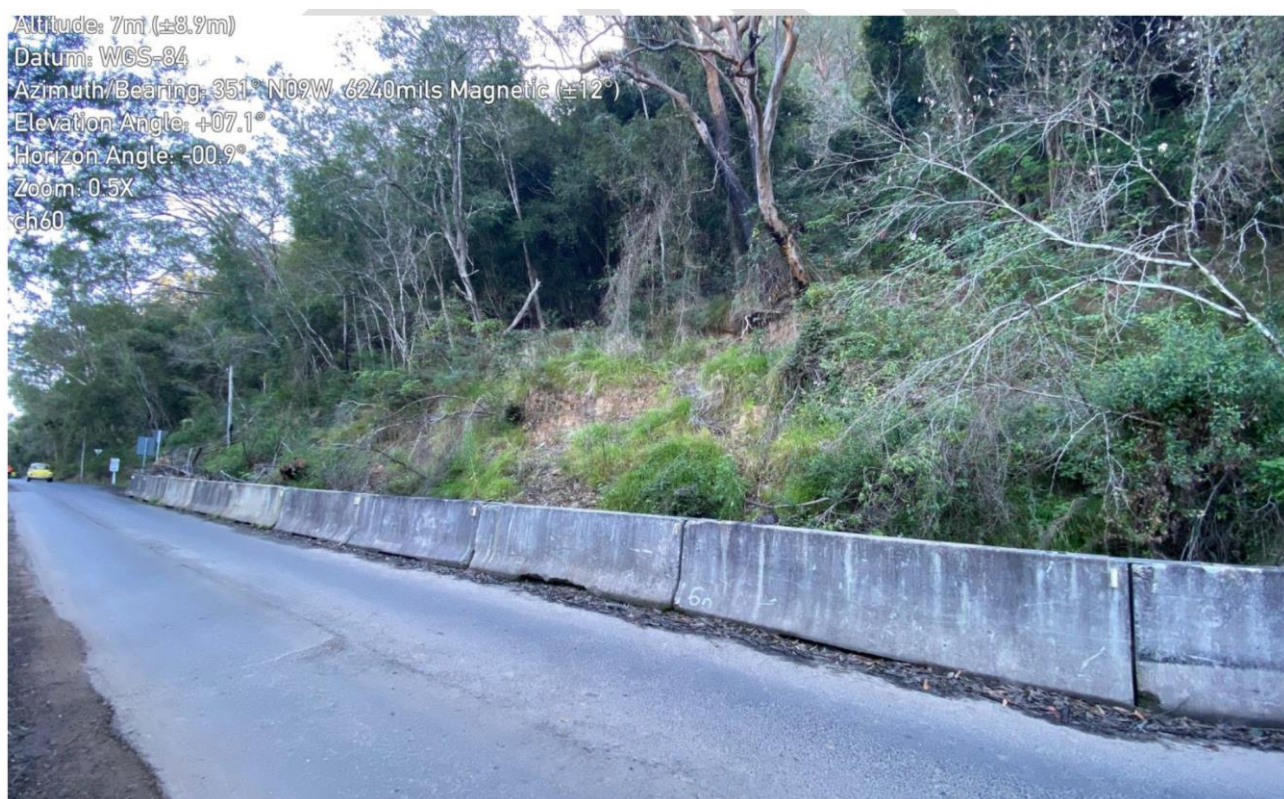


Figure 3-1 General view for south-eastern end of landslide



Figure 3-2 views of the landslide looking north east



Figure 3-3 Views of the landslide looking east

3.2 Design

The concept design is shown below in Figure 3-4.

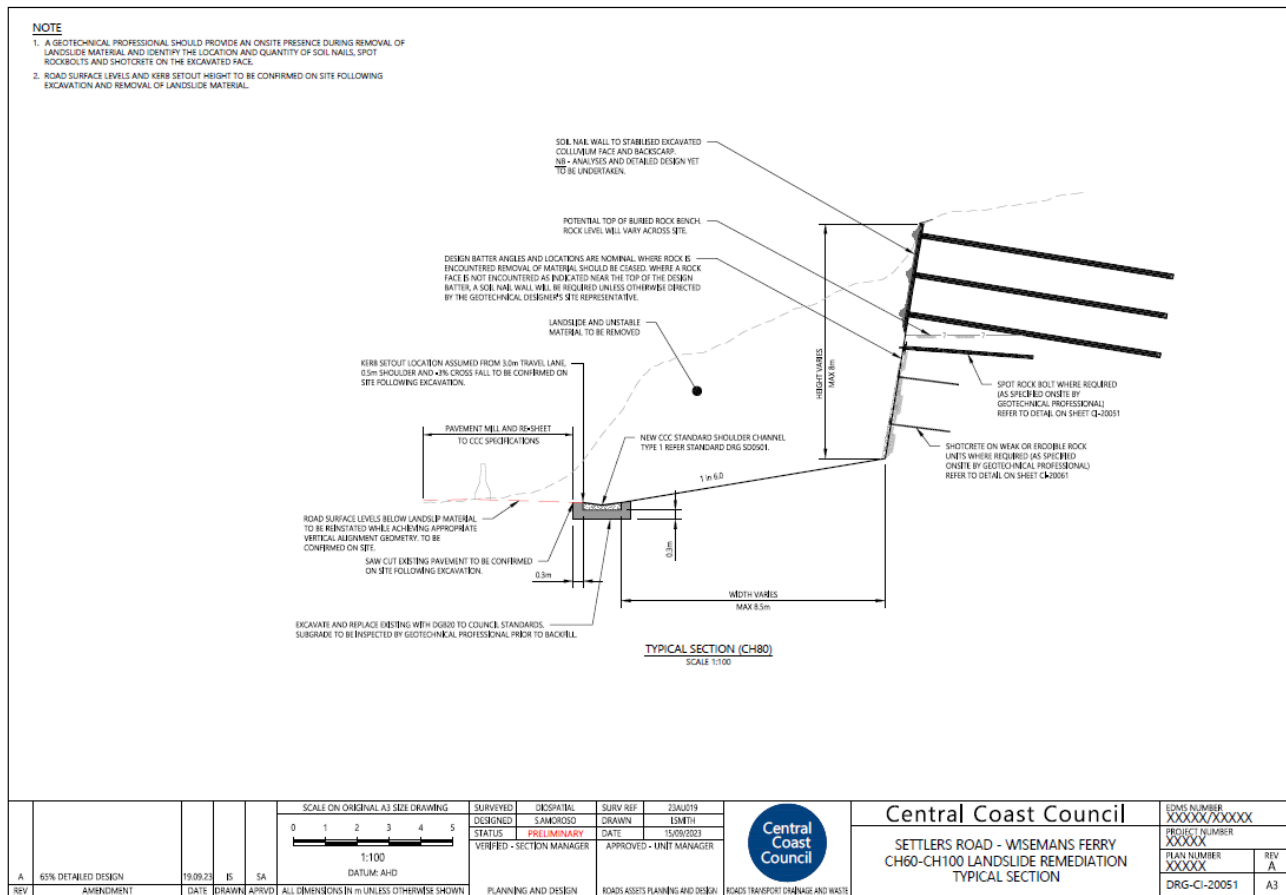


Figure 3-4 Modification concept design

3.2.1 Construction activities

This section summarises the methodology, work hours, plant and equipment and associated activities for construction of the proposal.

3.2.1.1 Indicative work methodology

The following construction steps are proposed to ensure the safe construction during the remedial works for this option:

- Site mobilisation and set up.
- Clearing of colluvial material commencing at the rock cliff crest in manageable sections, nominally no longer than 50 m in length. Where rock crest is not encountered within 5 m (horizontal) of the anticipated location, advice should be sought from the geotechnical designer prior to continuing.
- Clearing of unstable colluvium in a top-down manner back to a 'solid' surface (i.e. weathered rock).
- Dislodgement and cleaning of the exposed rock surface.
- Geotechnical assessment of rock bolt and shotcrete requirements by geotechnical designer.
- Drill and install rock bolts and shotcrete dowel with reinforcement as required.
- Shotcrete application.
- Road pavement and drainage works.
- Site demobilisation.

Works would be required to take place 24 hours 7 days a week to ensure that the Project is completed in the timeliest manner possible. This is essential to allow the road to be returned to working order as fast as possible for the residents.

3.2.1.2 Indicative Plant and equipment

The following machinery and equipment may be required for the completion of this project:

- Light 4WD vehicles (for site supervisor, and traffic control)
- Various hand tools
- Excavator
- Roller/compactor
- Tipper trucks
- Low loaders/float trucks
- Elevated work platforms
- Generator
- Chainsaws
- Concrete trucks and pumps
- Excavator mounted drilling equipment for soil nails/rock bolts.

3.2.2 Ancillary Facilities

Ancillary facilities are as described in the Project REF.

3.2.3 Construction hours and duration

Construction would be carried out both within and outside of standard working hours as defined by the Interim Construction Noise Guideline (ICNG; DECC, 2009) and summarised in Table 1-1. The works are required to be conducted during both standard and non-standard construction hours due to Road Occupancy Licence (ROL) conditions, in order to maintain road user and pedestrian safety. It is anticipated that the proposal would commence in late 2023 to early 2024.

Table 3-1 Standard and OOHW periods

Period of works	Monday to Friday	Saturday	Sunday and Public Holidays
Standard hours	7am – 6pm	8am – 1pm	No work
OOHW Period 1	6pm – 10pm	7am – 8am	8am – 6pm
		1pm - 10pm	
OOHW Period 2	10pm – 7am	10pm – 8am	6pm – 7am

3.2.4 Earthworks

Spoil would be temporarily stockpiled adjacent to the road within the verges and removed off-site in the same shift.

Colluvial landslide debris between the level of Settlers Road and the backscarp of the landslide will be progressively removed from the top down to expose a near vertical face which is expected to comprise colluvial soil and rock material overlying weathered rock. The location of the colluvium / weathered rock contact has not been established but is expected to vary across the length of the landslide. While it is anticipated that the excavation face will near vertical, excavation into intact buried weathered rock benches is not proposed, so the final rock excavation (where encountered) may be somewhat

irregular. The basal excavation limit will include a 1 vertical to 6 horizontal surfaces between the toe of the solid face and the edge of the roadway to facilitate drainage away from the toe of the excavated slope.

Removal of colluvium including loose material and rock blocks shall be reviewed onsite by the geotechnical designer / geotechnical representative at regular intervals throughout the excavation process to gauge that excessive material is not removed, and that material removal occurs in a judicious, practical and safe manner without further destabilising the slope or increasing the risk(s) to construction personnel or plant.

Top-down construction of a soil nail wall will be required as excavation progresses through the upper colluvium (where encountered).

4 Statutory and Planning Framework

4.1 Commonwealth Legislation

4.1.1 Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) requires the approval of the Commonwealth Minister for the Environment for actions that may have a significant impact on matters of national environmental significance (MNES). The EPBC Act lists seven MNES which must be addressed when assessing the impacts of a project. An assessment of how the project may impact on matters of NES is outlined below.

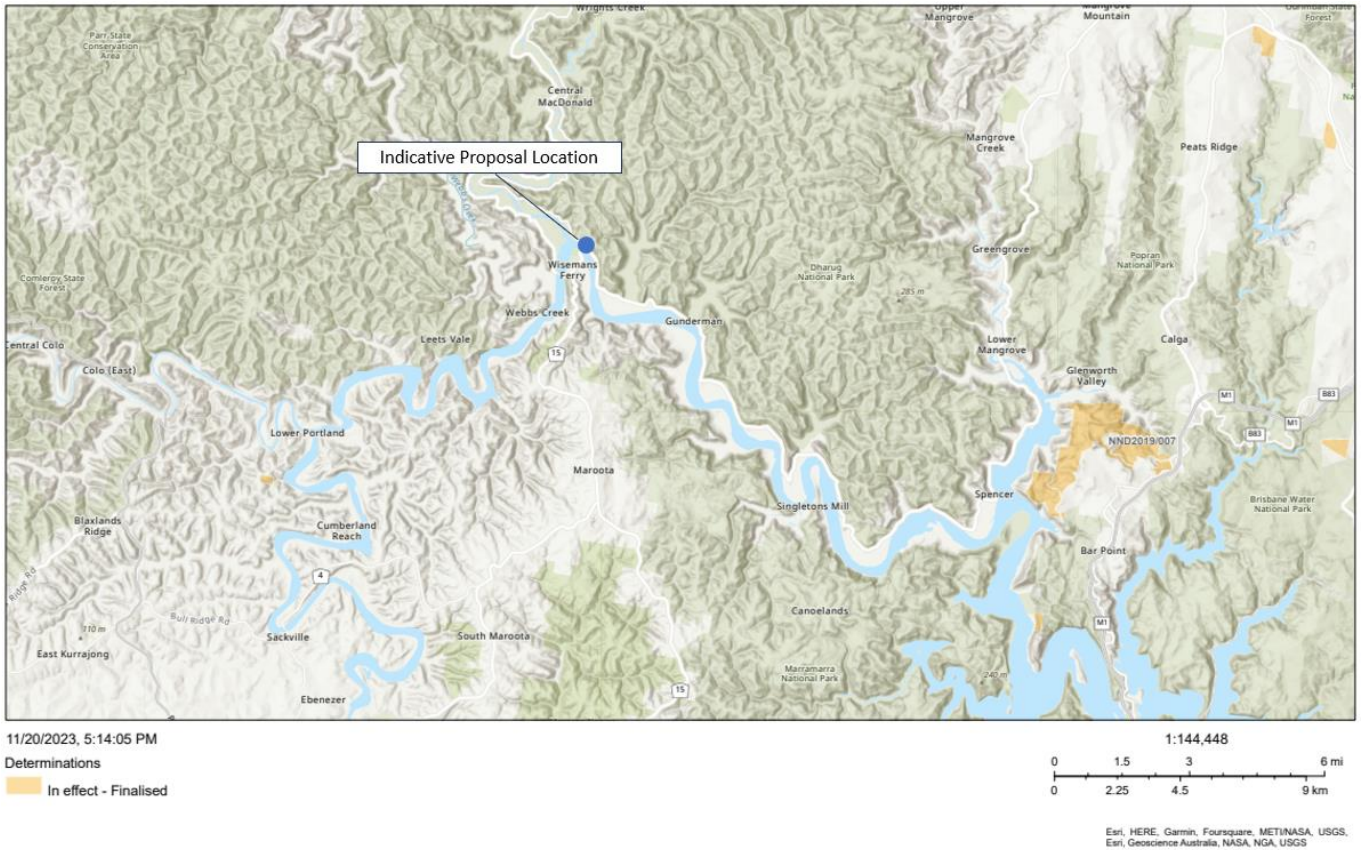
- **World heritage properties:** The proposal exists within the Australian Convict Sites (Old Great North Road Buffer Zone) heritage property, however, there is no impact to the Old Great North Road. There are no World Heritage Properties that would be affected by the proposed activity.
- **National heritage places:** The proposal exists within the Australian Convict Sites (Old Great North Road Buffer Zone) heritage property, however, there is no impact to the Old Great North Road. There are no National heritage places that would be affected by the activity.
- **Wetlands of international importance:** There are no Wetlands of international importance that would be affected by the activity.
- **Commonwealth listed threatened species and ecological communities:** There are no Commonwealth listed threatened species or ecological communities that are likely to be significantly impacted by the activity. Further details are provided in Section 6.1 and Appendix B.
- **Commonwealth listed migratory species:** The proposed activity would not be undertaken in or affect any Commonwealth marine areas.
- **Nuclear action:** The proposed activity would not involve any nuclear activities.
- **Commonwealth marine areas:** The proposed activity would not be undertaken in or affect any Commonwealth marine areas.

The proposed modification will not result in a 'significant impact' on any MNES and a referral to the Australian Government Minister for the Environment is not required.

4.1.2 Native Title Act 1993

The *Native Title Act 1993* recognises and protects native title. The Act covers actions affecting native title and the processes for determining whether native title exists and compensation for actions affecting native title. It establishes the Native Title Registrar, the National Native Title Tribunal, the Register of Native Title Claims and the Register of Indigenous Land Use Agreements, and the National Native Title Register. Under the Act, a future act includes proposed public infrastructure on land or waters that affects native title rights or interest.

A search of the [Native Title Tribunal Native Title Vision](#) website was undertaken, with no Native Title holders/claimants identified.



4.2 State Legislation and Planning Policy

4.2.1 Environmental Planning and Assessment Act 1979 and Environmental Planning and Assessment Regulation

The *Environmental Planning and Assessment Act 1979* (EP&A Act) is the principal planning legislation for NSW. It provides a framework for the overall environmental planning and assessment of proposals. The activity constitutes an activity under Part 5 of the *Environmental Planning and Assessment Act 1979* and as such, this proposal is being assessed in accordance with the NSW *Environmental Planning and Assessment Act 1979* and the NSW *Environmental Planning and Assessment Regulation 2000*.

As a local government authority, Central Coast Council is a determining authority under Part 5 of the Act. Accordingly, Council must satisfy Part 5 of the Act by examining, and considering to the fullest extent possible, all matters which are likely to affect the environment. This REF is intended to assist, and ensure Council’s compliance, with the EP&A Act and the requirements of Clause 171 of the EP&A Regulation 2021.

4.2.2 State Environmental Planning Policies

4.2.2.1 State Environmental Planning Policy (Transport and Infrastructure) 2021

The State Environmental Planning Policy (Transport and Infrastructure) 2021 superseded the State Environmental Planning Policy (Infrastructure) 2007 on 1 March 2022.

State Environmental Planning Policy (Transport and Infrastructure) 2021 (SEPP) aims to facilitate the effective delivery of infrastructure across the State. Under Division 17 Roads and road infrastructure facilities, Clause 2.109 allows for development for the purpose of a road or road infrastructure facilities to be carried out by or on behalf of a public authority without consent on any land. As the proposed modification project involves the repair of a road or road infrastructure facility under the prescribed circumstances, this work is permissible without development consent.

4.2.2.2 State Environment Planning Policy (Biodiversity and Conservation) 2021

The Biodiversity and Conservation SEPP includes provisions to protect the environment of the Hawkesbury-Nepean River system. Clause 171A of the Environmental Planning and Assessment Regulation includes requirements for activities proposed to be carried out in regulated catchments, one of which is the Hawkesbury-Nepean Catchment. The proposed modification is located wholly within the Hawkesbury-Nepean Catchment and therefore the following need to be considered:

- the matters a consent authority must consider under SEPP (Biodiversity and Conservation) 2021, sections 6.6(1), 6.7(1), 6.8(1) and 6.9(1)
- the matters of which a consent authority must be satisfied under the SEPP (Biodiversity and Conservation) 2021, sections 6.6(2), 6.7(2), 6.8(2) and 6.9(2)

An assessment of the proposal against the prescribed Biodiversity and Conservation SEPP matters is provided in Appendix E.

4.2.2.3 State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011

State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 relates to the use of land within the Sydney drinking water catchment. Clause 12 of the SEPP requires consideration of whether or not an activity to which Division 5.1 of the EP&A Act applies will have a neutral or beneficial effect on water quality before carrying to the activity. The proposed change is not within the Sydney Drinking Water Catchment and no additional assessment is required.

4.2.2.4 State Environmental Planning Policy (Resilience and Hazards) 2021

The State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP) commenced on the 1st of March 2022 and replaces the following former SEPPs:

- State Environmental Planning Policy (Coastal Management) 2018
- State Environmental Planning Policy 33 – Hazardous and Offensive Development, and
- State Environmental Planning Policy 55 – Remediation of Land.

The proposed modification is situated within the 'Coastal Use Area' and 'Coastal Environment Area' and is therefore subject to the relevant controls.

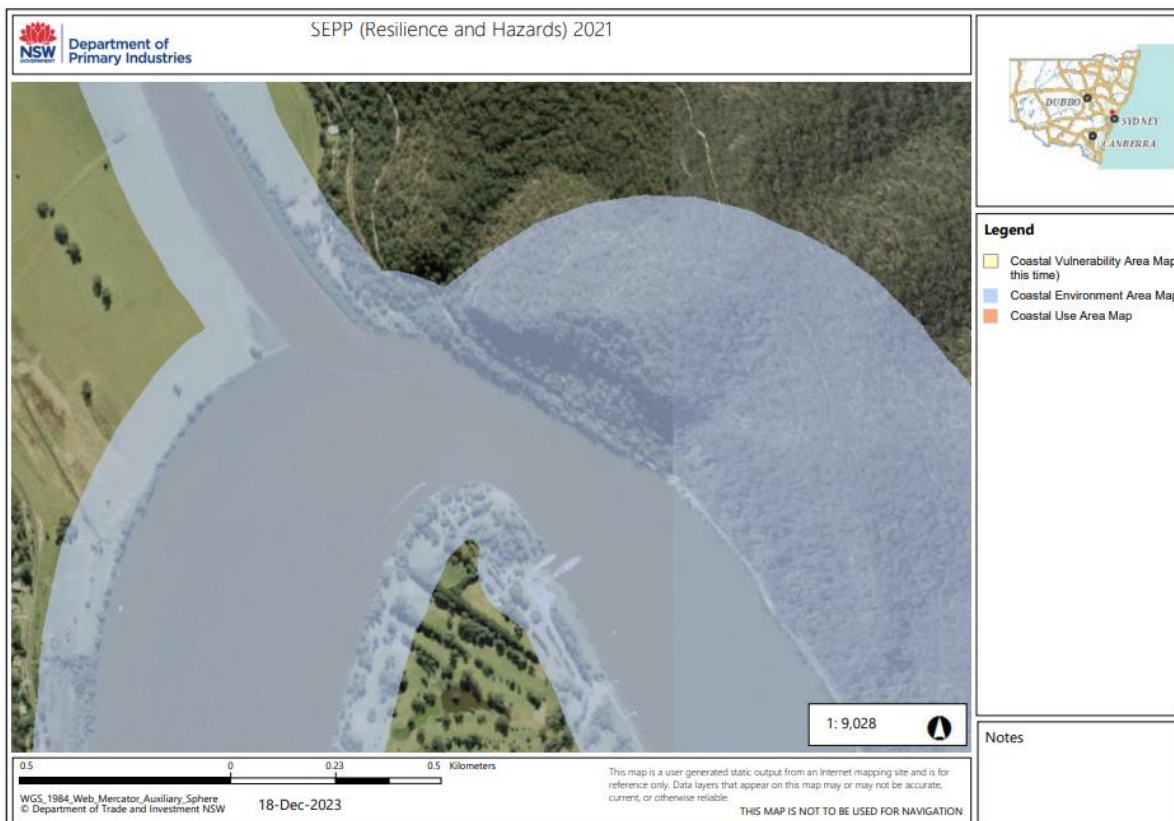


Figure 4-1 SEPP (Resilience and Hazards) 2021

4.2.2.4.1 Development on land within the coastal environment area

Development consent must not be granted to development on land that is within the coastal environment area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following:

- a) the integrity and resilience of the biophysical, hydrological (surface and groundwater) and ecological environment.
- b) coastal environmental values and natural coastal processes.
- c) the water quality of the marine estate (within the meaning of the Marine Estate Management Act 2014), in particular, the cumulative impacts of the proposed development on any of the sensitive coastal lakes identified in Schedule 1.
- d) marine vegetation, native vegetation and fauna and their habitats, undeveloped headlands and rock platforms.
- e) existing public open space and safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability.
- f) Aboriginal cultural heritage, practices and places.
- g) the use of the surf zone.

Given the nature of the proposed modification (i.e. slope remediation), opportunities to change the project design are limited and defined by geotechnical engineering requirements. With the observation of standard management measures listed within this REF and the FFA (Appendix B), the works would have minimal impacts on the coastal environment area.

4.2.2.4.2 Development on land within the coastal use area

Development consent must not be granted to development on land that is within the coastal use area unless the consent authority:

- a) has considered whether the proposed development is likely to cause an adverse impact on the following— existing, safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability.
 - i. overshadowing, wind funnelling and the loss of views from public places to foreshores.
 - ii. the visual amenity and scenic qualities of the coast, including coastal headlands.
 - iii. Aboriginal cultural heritage, practices and places.
 - iv. cultural and built environment heritage.
- b) is satisfied that
 - i. the development is designed, sited and will be managed to avoid an adverse impact referred to in paragraph (a).
 - ii. if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact.
 - iii. if that impact cannot be minimised—the development will be managed to mitigate that impact.
- c) has taken into account the surrounding coastal and built environment, and the bulk, scale and size of the proposed development.

Given the nature of the proposed modification (i.e. slope remediation), opportunities to avoid and minimise impacts, or adapt the project design are limited and defined by geotechnical engineering requirements. With the observation of standard management measures listed within Section 7, the works would have minima impacts on the coast use area.

4.2.3 Roads Act 1993

The objectives of this Act include, but are not limited to, the rights of persons to pass along public roads, the rights of neighbouring landowners, the responsibilities and requirements of roads authorities and the regulation of various activities on public roads. The Council is the roads authority for all public roads within an LGA, other than any freeway, crown road, or road for which some other public authority is declared to be the roads authority. Section 71 of the Act states that, “A roads authority may carry out road work on any public road for which it is the roads authority and on any other land under its control.”

4.2.4 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016 (BC Act)* commenced on 25 August 2017 repealing the *Threatened Species Conservation Act 1995*. The *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 list 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 *FM Act*, are assessed using a five-part test. Where a significant impact is likely to occur, a Species Impact Statement (SIS) or Biodiversity Assessment Report (BAR) must be prepared in accordance with the Secretary's requirements.

A biodiversity assessment has been carried out for the Project and is attached as Appendix B. This assessment found no threatened species or ecological communities would be significantly impacted by the Project.

4.2.5 NSW National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974 (NPW Act)* is administered by the NSW Environment, Energy and Science group of DPE with the intent of conserving the states natural and cultural heritage, fostering public appreciation, understanding and enjoyment of the natural and cultural heritage of NSW and managing any lands reserved for these purposes.

Under the Act it is an offence to:

- Knowingly destroy, deface or damage an Aboriginal object or place without consent;
- Pick or harm any plant or animal that is protected or is a threatened species, population or ecological community; or
- Damage any critical habitat or habitat of a threatened species, an endangered population or an endangered ecological community or reserved land.

The Project is partly located on the western edge of Dharug National Park. Consultation with the National Parks and Wildlife Services (NPWS) has formed part of the preparation of this REF.



Figure 4-2 National Parks and Wildlife Boundary

An Aboriginal Heritage Due Diligence Assessment was completed for the proposed modification and is contained within Appendix D of this addendum REF. There is no evidence that the site is in close proximity to any objects or places of Aboriginal archaeological significance. It is not expected that the proposed activity would impact upon any Aboriginal objects or places. The proposal is additionally, not adjacent or within any lands reserved under this Act. The proposed activity is unlikely to harm Aboriginal objects and therefore a permit under the NP&W Act is not required.

4.2.6 Fisheries Management Act 1994

Fisheries Management (FM) Act 1994 provides for the protection, conservation, and recovery of threatened species, populations and ecological communities of fish and marine vegetation and fish habitats, as well as promoting the development and sharing of fishery resources in NSW. It applies to all inland waters in the NSW, except for those waters classified as Commonwealth waters. The closest Key Fish Habitat (KFH) occurs within approximately 20m of the Subject Land, within the Hawkesbury River. The proposed activity does not require works within the watercourse, nor did marine vegetation protected under the FM Act occur within the Subject Land. As such, the activity would not impact upon KFH, nor are there any legislative requirements or notifications required under this Act.

4.2.7 Heritage Act 1977

The *Heritage Act 1977* provides for the protection of heritage items of local and state significance. Where works are likely to impact upon an item listed on the State Heritage Register (SHR) approvals are required. There are no listed State heritage

items located within close vicinity to the proposed work site. Therefore, the proposed works do not affect a listed heritage item either directly or indirectly. Approval of works on the site is therefore not required under part 4 of the Heritage Act.

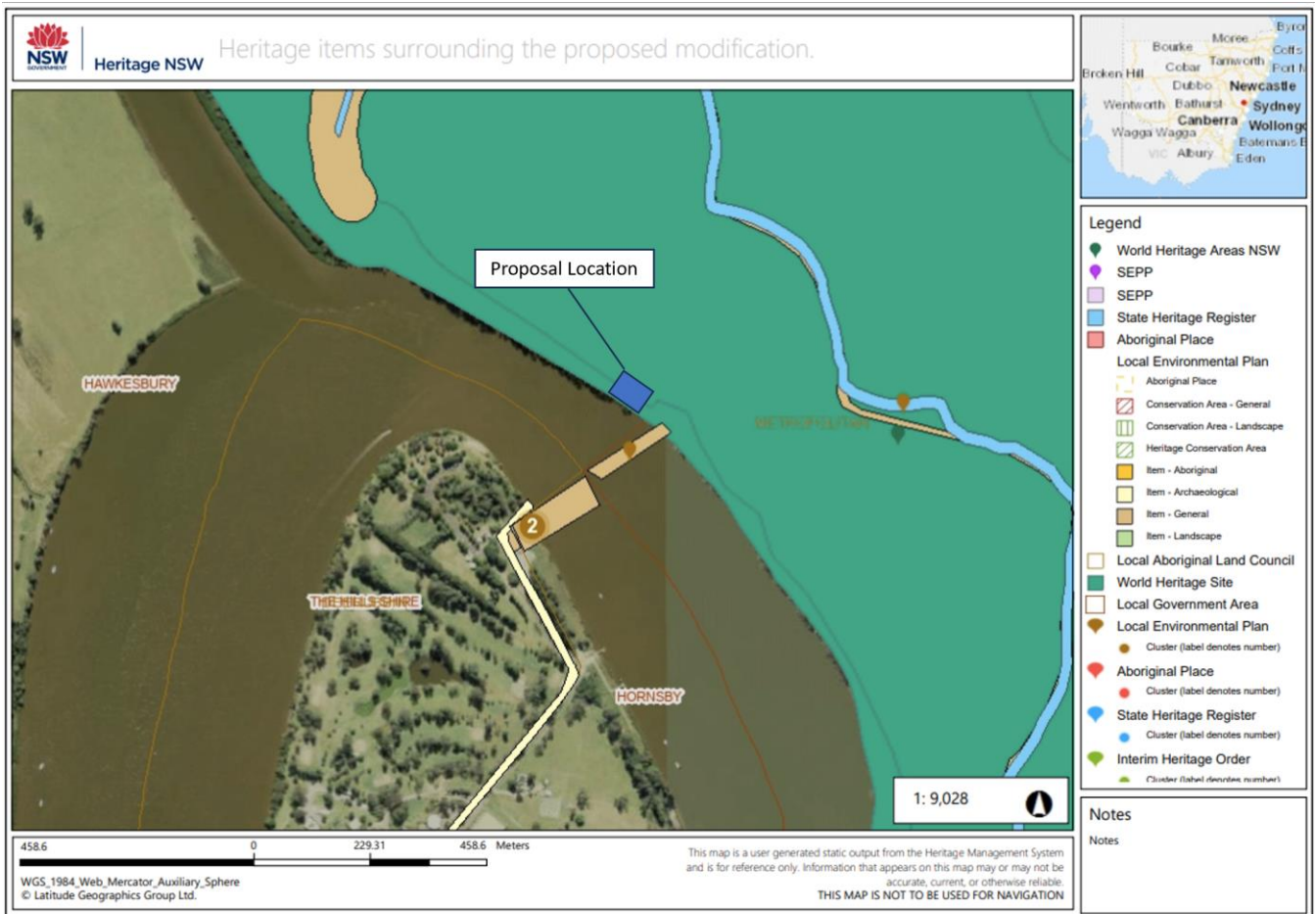


Figure 4-3 Heritage items surrounding the proposed modification

4.2.8 Water Management Act 2000

The aim of the *Water Management Act 2000* is to provide for the sustainable and integrated management of the water sources of NSW. Section 91 of the Act notes the need for an approval if a controlled activity is to be undertaken at a specified location in, on, or under waterfront land. The *Water Management (General) Regulation 2018* specifies exemptions to this in certain circumstances. Section 41 of the Regulation notes that a public authority is exempt from needing approval to undertake controlled activities in, on, or under waterfront land.

4.2.9 Waste Avoidance and Resource Recovery Act 2001

The Waste Avoidance and Resource Recovery (WARR) Act 2001 aim is to encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of ecologically sustainable development. It also relates to the proposal in that it aims to:

“Ensure that resource management options are considered against a hierarchy of the following order”

- (i) *Avoidance of unnecessary resource consumption,*
- (ii) *Resource recovery (including reuse, reprocessing, recycling and energy recovery),*
- (iii) *Disposal,*

And also aims to:

“Minimise the consumption of natural resources and final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste”.

The proposal is consistent with aims of the Waste Avoidance and Resource Recovery Act in that it has determined mitigation measures to manage waste by recycling where possible and Site generated waste will be collected and removed from the site to an approved waste disposal facility.

4.2.10 NSW Wilderness Act 1987

The objectives of the NSW Wilderness Act 1987 are:

- to provide for the permanent protection of wilderness areas;
- to provide for the proper management of wilderness areas; and
- to promote the education of the public in the appreciation, protection and management of wilderness. The proposal is not located within an area listed under the *NSW Wilderness Act 1987*.

The proposal is not located within an area listed under the *NSW Wilderness Act 1987*.

4.2.11 Rural Fires Act 1997 (RF Act)

The *Rural Fires Act 1997* (RF Act) aims to protect life and property through the following objectives:

- To prevent, mitigate and suppress bush and other fires in local government areas (or parts of areas) and other parts of the State constituted as rural fire districts
- The co-ordination of bush fire fighting and bush fire prevention throughout the State
- To protect persons from injury or death, and property from damage, arising from fires
- To protect infrastructure and environmental, economic, cultural, agricultural and community assets from damage arising from fires
- To protect the environment by requiring certain activities to be carried out having regard to the principles of ecologically sustainable development.

Under this Act, NPWS is the prescribed fire authority and is responsible for the control and suppression of all fires on lands that is under NPWS management. To assist in bush and other fire management, the fire management strategy provides the information for managing outbreaks of fire, operational guidelines for hazard reduction work and information to help assess bushfire threats. The relevant fire management strategy for this proposal Yengo National Park, Parr State Recreation Area and Dharug National Park Fire Management Plan.

Part 4 of this Act deals with the prevention of and minimisation of the spread of bushfires throughout the state. This proposal is consistent with the RF Act and the fire management strategy as it meets the objectives of the minimising and preventing bush and other fires from this proposal. The proposal is also aiming to increase safety and operational longevity of Settlers Rd adjacent to Dharug National Park, which would assist with future fire-fighting efforts.

4.2.12 Biosecurity Act 2015

The *Biosecurity Act 2015* (NSW) provides a framework for the prevention, elimination and minimisation of biosecurity risks posed by an activity as a matter of biosecurity. As defined in Part 3, section 23 of this Act, any non-conformance by an individual is defined as guilty of an offence.

One priority weed, *Lantana camara*, was identified within the proposal area. Suitable mitigation measures have been provided within Section 7 and the FFA to appropriately manage weeds within the impact areas in accordance with the *Biosecurity Act 2015*.

4.3 Local Environmental Plans

4.3.1 Central Coast Local Environment Plan 2022

The proposal is located within the Central Coast Local Government Area (LGA), however, is on the boundary of the LGA, with the Hawkesbury the adjacent LGA.

The applicable local planning instrument for the area is the Central Coast Local Environment Plan 2022 (Central Coast LEP 2022).

The proposed Project is within an area zoned C4 (Figure 4-4) and is located adjacent to C1. C1 enables the management and appropriate use of land that is reserved under the *National Parks and Wildlife Act 1974*. C4 provides for low-impact residential development in areas with special ecological, scientific or aesthetic values. Part 2.1 Clause 2.7 of the Transport and Infrastructure SEPP serves to override the permissible development provisions of the Local Environmental Plan (LEP); the development restrictions of the LEP therefore do not apply.

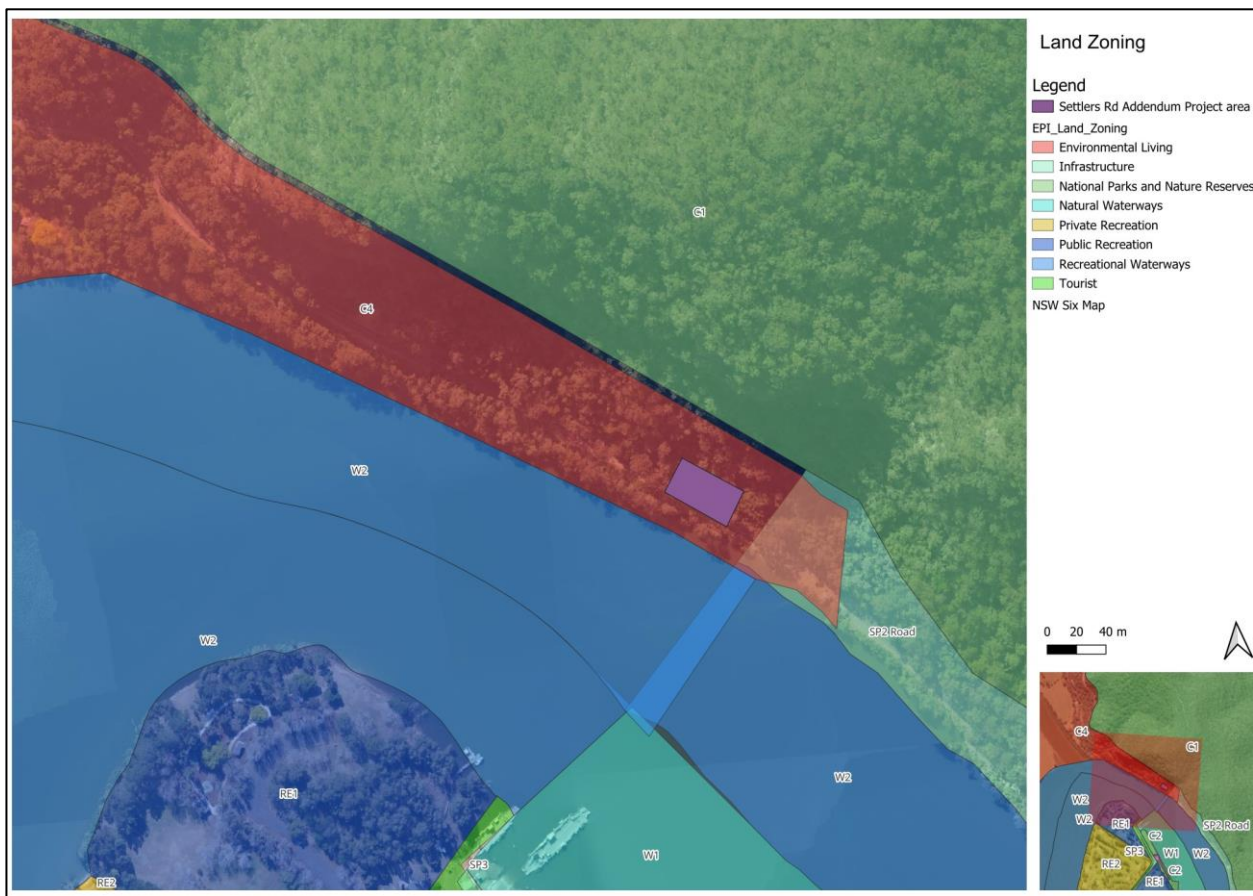


Figure 4-4 Land Zoning

4.3.2 Hawkesbury Local Environmental Plan 2012

The proposal is located on the boundary of the Hawkesbury City Council LGA and therefore the local planning instrument for the area, the Hawkesbury Local Environmental Plan 2012 (Hawkesbury LEP 2012), was also considered in this REF.

The proposed Project is adjacent to land that is subject to Hawkesbury Local Environmental Plan 2012 and is zoned E1 and E4 (shown as C1 and C4 in Figure 4-4), which provides for low-impact residential development in areas with special ecological, scientific or aesthetic values. Part 2.1 Clause 2.7 of the Transport and Infrastructure SEPP serves to override the permissible development provisions of the Local Environmental Plan (LEP); the development restrictions of the LEP therefore do not apply.

4.4 Confirmation of Statutory Position

The proposed modification is categorised as development of the purpose of a road and or road infrastructure facility and is being carried out by or on behalf of a public authority. Under clause 2.109 of the Transport and Infrastructure SEPP the proposal is permissible without consent/ The proposal is not State significant infrastructure or State significant development. The proposal can be assessed under Division 5.1 of the EP&A Act.

Central Coast Council is the determining authority for the proposal. This addendum REF fulfils Central Coast Councils obligation under section 5.5 of the EP&A Act including 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.

A referral to the Commonwealth Minister for the Environment under the EPBC Act is not required.

5 Stakeholder and Community Consultation

5.1.1.1 State Environmental Planning Policy (Transport and Infrastructure) 2021

Part 2.2, Division 1 of the TISEPP contains provisions for public authorities to consult with local councils and other public authorities prior to the commencement of certain types of development. This is detailed below:

Is consultation with relevant stakeholders within council required under clauses 2.10-2.14 of the transport and infrastructure SEPP?		
Are the works likely to have a substantial impact on the stormwater management services which are provided by council? The works would not have a substantial impact on stormwater management services provided by council.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
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? The works are not likely to generate traffic to an extent that will strain the capacity of the existing road system in a local government area.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Will the works involve connection to a council owned sewerage system? If so, will this connection have a substantial impact on the capacity of the system? The works would not affect the functioning of the existing sewer line.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
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? The works would not involve connection to a council owned water supply system.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
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? The work would not involve the enclosing of a public space or installation of a temporary structure on council managed land.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Will the works involve more than a minor or inconsequential excavation of a road or adjacent footpath for which council is the roads authority and responsible for maintenance? The works would not involve more than a minor or inconsequential excavation of a road or adjacent footpath for which council is the roads authority and responsible for maintenance.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is there 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? There are no listed heritage sites or areas located within or in close proximity to the proposal area. The Wisemans Ferry is located adjacent to the proposal area, however, would not be impacted by the works.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is notification of carrying out of certain development under section 2.109 or 2.110 required?		
Does the proposal include a car park intended for the use by commuters using regular bus services? The works would not include a car park intended for the use by commuters using regular bus services.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Does the project propose a bus depot?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

The work does not propose a bus depot.		
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? The work does not propose a permanent road maintenance depot or associated infrastructure, such as garages, sheds, tool houses, storage yards, training facilities and workers amenities.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Is the proposal within the coastal vulnerability area and is inconsistent with a certified coastal management program applying to that land? The work has not been identified as being located in a coastal vulnerability area.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No/NA
Are the works located on flood liable land? If so, will the works change flooding patterns to more than a minor extent? 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 <i>Floodplain Development Manual: the management of flood liable land</i> published by the New South Wales Government. The proposal is located on flood liable land, however, would not change the flooding patterns during either construction or operation.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

Is consultation with a public authority (other than Council) required under Part 2.2, Division 1 of the Transport and Infrastructure SEPP?		
Are the works located on flood liable land? (to any extent) (TISEPP 2.13, 2.15) If so, do the works comprise more than minor alterations or additions to, or the demolition of, a building, emergency works or routine maintenance? 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 <i>Floodplain Development Manual: the management of flood liable land</i> published by the New South Wales Government. The proposal is located within flood liable land, however, the work consists of remedial maintenance activities that do not comprise more than minor alterations to the road formation that was previously in place prior to the failures.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No/NA
Are the works adjacent to a national park, nature reserve or other area reserved under the <i>National Parks and Wildlife Act 1974</i> , or on land acquired under that Act? The proposal area is located partly on an area reserved under the <i>National Parks and Wildlife Act</i> . National Parks and Wildlife Services have been consulted during the preparation of this REF.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Are the works on land in Zone C1 National Parks and Nature Reserves or in a land use zone equivalent to that zone? The works are partially located or immediately adjacent to land zoned C1 or in an equivalent land use zone. National Parks and Wildlife Services have been consulted during the preparation of this REF.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Are the works adjacent to an aquatic reserve or a marine park declared under the <i>Marine Estate Management Act 2014</i> ? The proposed work would not be located within or adjacent to an aquatic reserve or marine park.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are the works for the purpose of residential accommodation, a health services facility, or a correctional centre in bush fire prone land?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

The proposed works are not for the purpose of residential accommodation, a health services facility, or a correctional centre in bush fire prone land		
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)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
The proposed works are not located near the dark sky region.		
Are the works on buffer land around the defence communications facility near Morundah? (Note: refer to Defence Communications Facility Buffer Map referred to in clause 5.15 of Lockhardt LEP 2012, Narrandera LEP 2013 and Urana LEP 2011).	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
N/A. The proposed works are not located on buffer land around the defence communications facility near Morundah.		
Are the works on land in a mine subsidence district within the meaning of the <i>Mine Subsidence Compensation Act 1961</i> ?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

5.1.1.2 Community Consultation

Due to the nature of the work being the rehabilitation of the existing roadway, no wider community consultation is proposed to be carried out prior to the Project being carried out.

Consultation with the immediately affected landholders would be carried out prior to the commencement of the work to discuss property access and lease arrangements where appropriate. Work would not commence until all necessary property access arrangements are agreed with the affected property owners.

A briefing was held between representatives of the National Parks and Wildlife Service (NPWS), Central Coast Council and Hawkesbury City Council on the 3rd of August 2023 for the project REF. It was agreed during the briefing that as part of the proposal is located within the National Park, NPWS would also determine the Project REF, which would fulfil the requirements of formal consultation under the Transport and Infrastructure SEPP. A similar approach has been followed for this addendum REF and NPWS will determine the proposed modification as it relates to Dharug National Park.

A Start of Work notification would be distributed to the potentially affected community and stakeholders at least five business days prior to the commencement of work. The start of work notification would include information about the nature of work that would be carried out, along with the timing and a description of the potential impacts. Details of the 24-hour community hotline phone number would also be included in the notification and directing any enquires to call this number.

6 Assessment of Environmental Aspects

This section of the REF provides a detailed description of the potential environmental impacts associated with the construction and operation of the proposal. All aspects of the environment potentially impacted upon by the proposal are considered. This includes consideration of:

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

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

6.1 Flora and Fauna

East Coast Ecology Pty Ltd (ECE) was commissioned by CCC c/- Hutchison Weller to prepare a Flora and Fauna Assessment (FFA), including 5-Part Test and Assessment of Significance, for the proposed modified activity along Settlers Road, Wisemans Ferry. The following sections are based on the findings of the FFA which is attached as Appendix B.

The overarching objective of the FFA was to evaluate the ecological values that occur within the Subject Land and identify how the proposed activity satisfies the relevant planning framework. Figure 6-1 indicates the land subject to the assessment.

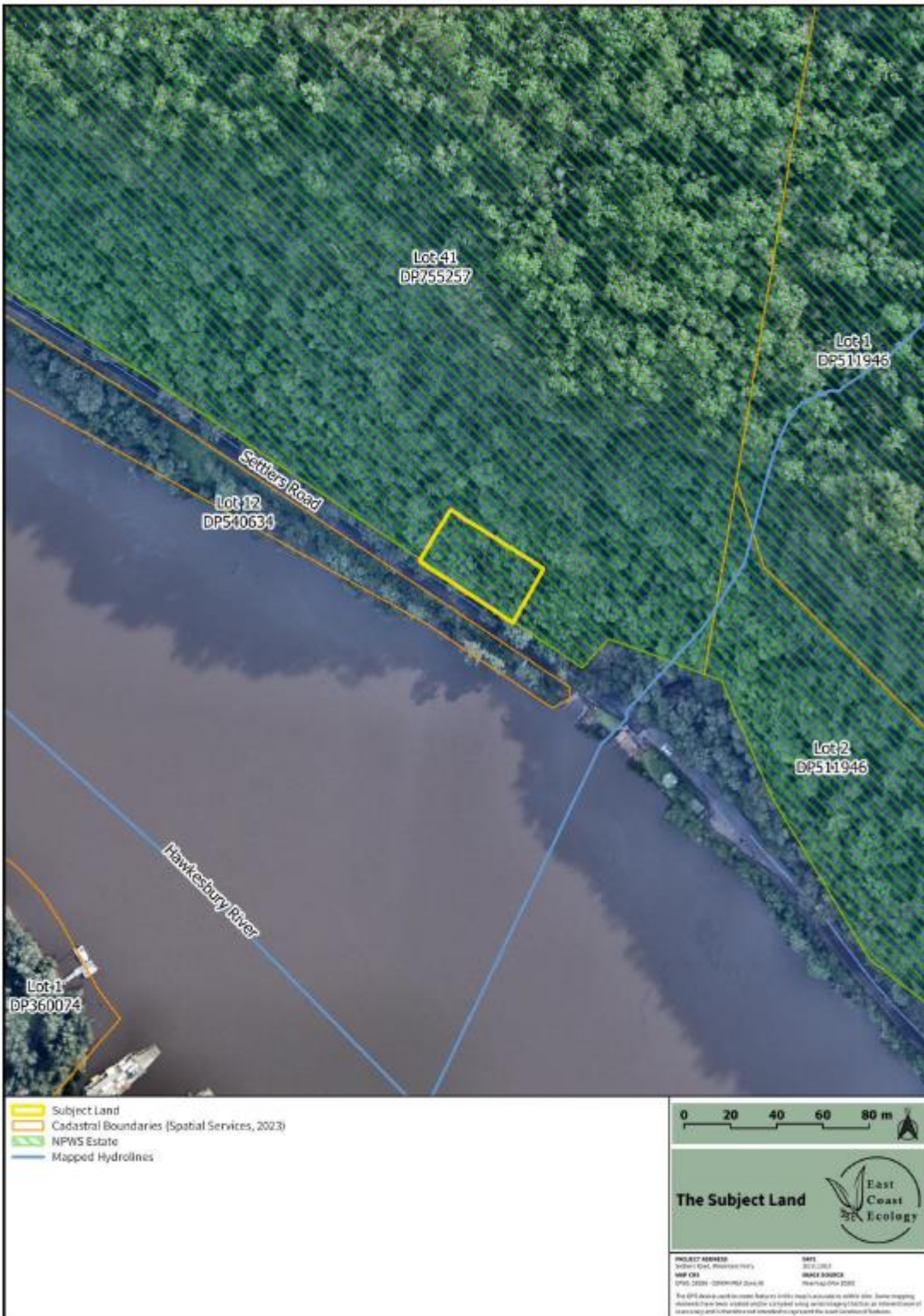


Figure 6-1 Location of the subject land.

6.1.1 Existing environment

6.1.1.1 Plant Community Types

The State Vegetation Type Map (DPE, 2023d) indicated the presence of one Plant Community Type (PCT) in proximity to the Subject Land, as shown below in Figure 6-2:

- PCT 3238: Hunter Range Colluvial Apple-Gum Forest.



Figure 6-2 Mapped vegetation communities within/ surrounding the Subject Land.

The site assessment confirmed the presence of this community within the subject land. Approximately 0.13ha of this PCT are present within the modification area, as shown in Figure 6-3. This PCT is not listed under the BC Act (2016) or the EPBC Act (1999).

The vegetation within the modification area was generally in poor condition, with localised patches of priority and environmental weeds mostly adjoining Settlers Road. Within the proposal area, the vegetation was dominated by *A. floribunda* with scattered *E. punctata* and *E. eugenoides*. The sub-canopy was co-dominated by *Syzygium smithii* and *Allocasuarina toulosa*. Evidence of an ecotone with PCT 3038: Sydney Coastal Coachwood Gallery Rainforest was apparent adjoining gullies and riparian areas, reflected by an increase in *Backhousia myrtifolia*. Large landslips have devegetated the ground and mid-stratum throughout the Subject Land resulting in exposed rock and bare earth. Due to the presence of overhanging native canopy, they have been included within this vegetation type. Where landslips had occurred, the colonising species were dominated by environmental weeds.



Figure 6-3 Field validated vegetation within the subject land

6.1.1.2 Threatened flora

Database searches revealed 16 threatened flora have potential to occur within a ~5km radius of the Subject Land (Table 6-1).

No threatened flora species were identified within the Subject Land however, this does not rule out the potential for threatened species to still exist within the Subject Land, particularly threatened orchids, grasses and herbs. Within 500m of the Subject Land, records of one threatened flora species are known to occur:

- *Ancistrachne maidenii*

Based on habitat constraints, no threatened flora species were considered likely to occur within the Subject Land, particularly given the existing disturbed state.

Table 6-1 Threatened flora with potential to occur within the Subject Land.

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
<i>Acacia bynoeana</i>	Bynoe's Wattle	E	V	5
<i>Ancistrachne maidenii</i>	-	V	-	30
<i>Asterolasia elegans</i>	-	E	E	72
<i>Darwinia fascicularis subsp. oligantha</i>	<i>Darwinia fascicularis subsp. oligantha</i> population in the Baulkham Hills and Hornsby Local Government Areas	E	-	2
<i>Grammitis stenophylla</i>	Narrow-leaf Finger Fern	E	-	2
<i>Grevillea parviflora subsp. supplicans</i>	-	E	-	1
<i>Hibbertia spanantha</i>	Julian's Hibbertia	E	CE	1
<i>Lasiopetalum joyceae</i>	-	V	V	3
<i>Melaleuca deanei</i>	Deane's Paperbark	V	V	3
<i>Micromyrtus blakelyi</i>	-	V	V	3
<i>Olearia cordata</i>	-	V	V	15
<i>Pimelea curviflora var. curviflora</i>	-	V	V	6
<i>Pomaderris brunnea</i>	Brown Pomaderris	E	V	2
<i>Syzygium paniculatum</i>	Magenta Lilly Pilly	E	V	1
<i>Tetradlea glandulosa</i>	-	V	-	20
<i>Zieria involucrata</i>	-	E	V	22

V – Vulnerable; E – Endangered; EP – Endangered Population; CE – Critically Endangered

6.1.1.3 Threatened fauna

Database searches revealed 38 threatened fauna occur, or have potential to occur, within a ~5km radius of the Subject Land (Table 6-2). The location of the previously identified threatened fauna species is included in Figure 6-4.

No threatened fauna species were identified within the Subject Land however, this does not rule out the potential for threatened species to still exist within the Subject Land, particularly given no targeted surveys were undertaken. Five (5) threatened fauna have the potential to occur within the Subject Land, based on habitat constraints and/ or historical records, that could be impacted by the activity. These species are:

- Amphibians:
 - *Pseudophryne australis* (Red-crowned Toadlet).
- Non-volant mammals:
 - *Cercartetus nanus* (Eastern Pygmy-possum).
- Volant mammals:
 - *Chalinolobus dwyeri* (Large-eared Pied Bat).
 - *Myotis macropus* (Southern Myotis).
- Reptiles:
 - *Varanus rosenbergi* (Rosenberg's Goanna).

Given the targeted nature of the activity (i.e. removal of disturbed ground stratum and structurally compromised damaged canopy) and large areas of potential habitat connected to the Subject Land, it was determined that the proposed activity is not likely to significantly impact upon any threatened fauna.

Table 6-2 Threatened fauna with potential to occur within the Subject Land.

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
<i>Heleioporus australiacus</i>	Giant Burrowing Frog	V	V	1
<i>Pseudophryne australis</i>	Red-crowned Toadlet	V	-	11
<i>Anthochaera phrygia</i>	Regent Honeyeater	E	CE	1
<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	V	-	2
<i>Burhinus grallarius</i>	Bush Stone-curlew	E	-	1
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	V	E	15
<i>Calyptorhynchus lathami lathami</i>	South-eastern Glossy Black- Cockatoo	V	V	40
<i>Chthonicola sagittata</i>	Speckled Warbler	V	-	1
<i>Daphoenositta chrysoptera</i>	Varied Sittella	V	-	9
<i>Glossopsitta pusilla</i>	Little Lorikeet	V	-	3
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	V	-	11
<i>Hieraaetus morphnoides</i>	Little Eagle	V	-	4
<i>Hirundapus caudacutus</i>	White-throated Needletail	-	V	4
<i>Ixobrychus flavicollis</i>	Black Bittern	V	-	5
<i>Lathamus discolor</i>	Swift Parrot	E	CE	2

<i>Ninox strenua</i>	Powerful Owl	V	-	9
<i>Pandion cristatus</i>	Eastern Osprey	V	-	3
<i>Petroica boodang</i>	Scarlet Robin	V	-	1
<i>Petroica phoenicea</i>	Flame Robin	V	-	1
<i>Pterodroma leucoptera leucoptera</i>	Gould's Petrel	V	E	1
<i>Tyto novaehollandiae</i>	Masked Owl	V	-	3
<i>Tyto tenebricosa</i>	Sooty Owl	V	-	3
<i>Pommerhelix duralensis</i>	Dural Land Snail	E	E	3
<i>Cercartetus nanus</i>	Eastern Pygmy-possum	V	-	11
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	V	V	4
<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	V	E	5
<i>Micronomus norfolkensis</i>	Eastern Coastal Free-tailed Bat	V	-	2
<i>Miniopterus orianae oceanensis</i>	Large Bent-winged Bat	V	-	1
<i>Myotis macropus</i>	Southern Myotis	V	-	2
<i>Petauroides volans</i>	Southern Greater Glider	E	E	2
<i>Petaurus australis</i>	Yellow-bellied Glider	V	V	7
<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	V	-	3
<i>Phascolarctos cinereus</i>	Koala	E	E	9
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	V	3
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	V	-	1
<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	V	-	1
<i>Hoplocephalus bungaroides</i>	Broad-headed Snake	E	V	1
<i>Varanus rosenbergi</i>	Rosenberg's Goanna	V	-	6

6.1.1.4 Migratory Species

Database searches revealed seven migratory terrestrial species (Table 6-3), or their habitat, are known to occur within the Subject Land. These species do not breed in Australia.

Table 6-3 Migratory terrestrial species with potential to occur in the Subject Land.

Species	EPBC Act Status
<i>Cuculus optatus</i> (Oriental Cuckoo)	Migratory, CAMBA, JAMBA, ROKAMBA
<i>Hirundapus caudacutus</i> (White-throated Needletail)	Vulnerable, Migratory, CAMBA, JAMBA, ROKAMBA
<i>Monarcha melanopsis</i> (Black-faced Monarch)	Migratory, Bonn
<i>Monarcha trivirgatus</i> (Spectacled Monarch)	Migratory, Bonn
<i>Motacilla flava</i> (Yellow Wagtail)	Migratory, CAMBA, JAMBA, ROKAMBA
<i>Myiagra cyanoleuca</i> (Satin Flycatcher)	Migratory, Bonn
<i>Rhipidura rufifrons</i> (Rufous Fantail)	Migratory, Bonn

CAMBA = China-Australia Migratory Bird Agreement, JAMBA = Japan-Australia Migratory Bird Agreement, ROKAMBA = Republic of Korea-Australia Migratory Bird Agreement and Bonn = Convention on the Conservation of Migratory Species of Wild Animals.



Figure 6-4 Threatened species records within proximity to the Subject Land.

6.1.2 Potential impacts

6.1.2.1 Summary

The primary direct ecological impact of the activity is clearing of native vegetation. The proposed activity will result in the removal of 0.13ha of PCT3238: Hunter Range Colluvial Apple-Gum Forest.

Vegetation within the modification area is generally in poor condition due to the landslip, characterised by dead or dying standing trees, recently fallen trees and completely devegetated areas where the landslip was most prominent. Early signs of revegetation appeared to be dominated by common environmental weeds.

6.1.2.2 Impacts to protected fauna

All vegetation proposed for removal provides minor foraging habitat for a suite of protected fauna species. Sensitive and/ or specialist fauna habitats that may be directly impacted by the activity include:

- Rocky habitats (boulders), and
- Leaf litter and woody debris.

Within the context of the surrounding landscape, these habitat types are unlikely to offer suitable habitat for threatened fauna owing to the proximity of the ongoing operational impacts created by traffic on Settlers Road, as well as the recent landslip. Furthermore, the extensive, superior habitat offered within the adjoining National Park means that threatened fauna are unlikely to occupy the Subject Land in preference of surrounding habitats.

6.1.2.3 Impacts to threatened species and communities

No threatened ecological communities were identified within the Subject Land, nor will any nearby be impacted by the proposed activity.

No threatened species were identified during the biodiversity site assessment. The proposed modification has the potential to impact habitat for several species that have the potential to occur within the Subject Land, based on habitat constraints and could not be surveyed owing to the timing of the site assessment falling outside of the DPE endorsed survey periods. The result of a Test of Significance (5-Part Test) under the BC Act was that the proposed activity will not result in a 'significant impact' on any threatened entities and therefore the Biodiversity Offset Scheme is not triggered. As such, an SIS or a BDAR is not required. The result of an Assessment of Significance under the EPBC Act was that the proposed activity will not result in a 'significant impact' on any MNES and a referral to the Australian Government Minister for the Environment is not required.

6.1.2.4 Operational Impacts

Wildlife Connectivity and Habitat Fragmentation

The Subject Land consists of an existing road corridor that has already fragmented the landscape.

It is possible that noise-related disturbance during construction may create a behavioural barrier to species which will temporarily create unsuitable conditions for crossing the road in proximity to the Subject Land. However, it is expected that construction will be finished by the end of Q1 2024 and existing areas suitable for crossing Settlers Road will remain unimpacted outside the Subject Land therefore, any behavioural impact is likely to be minor.

Fauna Injury and Mortality

The risk of injury and mortality is likely to be unchanged for Settlers Road following the completion of works. Injury and mortality of fauna could occur during construction activities and specific impacts may arise as a result of:

- Vegetation and habitat removal
- Machinery and plant operation, and
- Construction traffic.

Targeted measures to mitigate these impacts are discussed in Section 6.1.3.

6.1.2.5 Conclusion on significance of impacts

The proposed activity will impact approximately 0.13ha of native vegetation (PCT3238: Hunter Range Colluvial Apple-Gum Forest). No threatened flora or fauna species were identified within the Subject Land however, this does not rule out the potential for threatened species to still exist within the Subject Land, particularly cryptic species.

With the implementation of appropriate mitigation measures the proposed activity is expected to have a non-significant impact to protected biodiversity and is unlikely to significantly impact any threatened ecological community or species.

6.1.3 Safeguards and management measures

Safeguards and management measures remain the same as the Settlers Road Project REF and have been included below.

	Environmental Management Measures
Fauna and Flora	<p>B1. Avoidance of native vegetation clearing outside the approved Project footprint (0.13 ha), and an exclusion zone (No-Go-Zone) will be established and marked to indicate the limit of clearing boundary. Note that the marking out of exclusion zone will be subject to a safety assessment by the Project geotechnical engineer to ensure the safety of the workers.</p> <p>B2. Prior to works, the applicant should commission the services of a qualified and experienced Ecological Consultant (minimum 3 years' experience) with a minimum tertiary degree in Science, Conservation, Biology, Ecology, Natural Resource Management, Environmental Science or Environmental Management. The Ecologist must be licensed with a current Department of Primary Industries Animal Research Authority permit and New South Wales Scientific License issued under the BC Act.</p> <p>B3. Where safe access is possible pre-clearing surveys would be undertaken by an ecologist for candidate threatened flora and fauna within the Project Footprint, prior to vegetation removal. The project ecologist is to mark and identify all hollow-bearing trees and stags identified within the Project Footprint as part of this assessment.</p> <p>B4. All habitat trees should be felled using a 'slow drop' technique, where possible. This involves knocking the trees to encourage any in situ fauna to vacate (e.g. using an excavator bucket) before slowly pushing the trees to the ground. Logs and log piles should be relocated outside of impact areas to minimise any loss of habitat. The use of the 'slow drop' technique will be dependent on the location of the hollow bearing tree and whether this can be done safely.</p> <p>B5. An unexpected threatened species finds protocol is to be adopted and, in the case where a threatened species is encountered on site during construction or clearing activities, the procedure followed.</p> <p>B6. Sedimentation and erosion control plan to be incorporated into the construction management plan.</p> <p>B7. Hygiene protocols are to be implemented onsite during construction to prevent the spread of zoonotic and fungus diseases, and soil pathogens.</p> <p>B8. Allocate all storage, stockpile, and laydown sites away from any vegetation that is planned to be retained. Avoid importing any soil from outside the site in order to avoid the potential of incurring indirect impacts on biodiversity values as this can introduce weeds and pathogens to the site. If materials are required to be imported for landscaping works, they are to be sterilised according to industry standards prior to importation to site.</p> <p>B9. Control measures (e.g. the directional lighting and task lighting) are to be installed to minimise glare and light spillage into adjoining vegetation to minimise potential impacts to fauna species.</p>

6.2 Soil and Surface water

6.2.1 Existing environment

6.2.1.1 Topography

Settlers Road is located directly adjacent to the Hawkesbury River, near the confluence of the Macdonald River. The general topography of the area slopes steeply downwards towards the banks of the Hawkesbury River. At the location of the landslide Settlers Road has been cut through the landscape with a steep cut batter to the north and an equally steep fill batter to the south.

6.2.1.2 Geology and soils

The St Albans 1:100,000 Geological Series Sheet (NSW Department of Land and Water Conservation, 1997) indicates that the majority of the project area is underlain by geological units associated with the Watagan, and Wisemans Ferry Groups (Figure 6-5).

The Watagan soil group is prone to sheet erosion where groundcover is not maintained. The slip currently present at the site as a result of flooding is typical of the group along roadside batters.

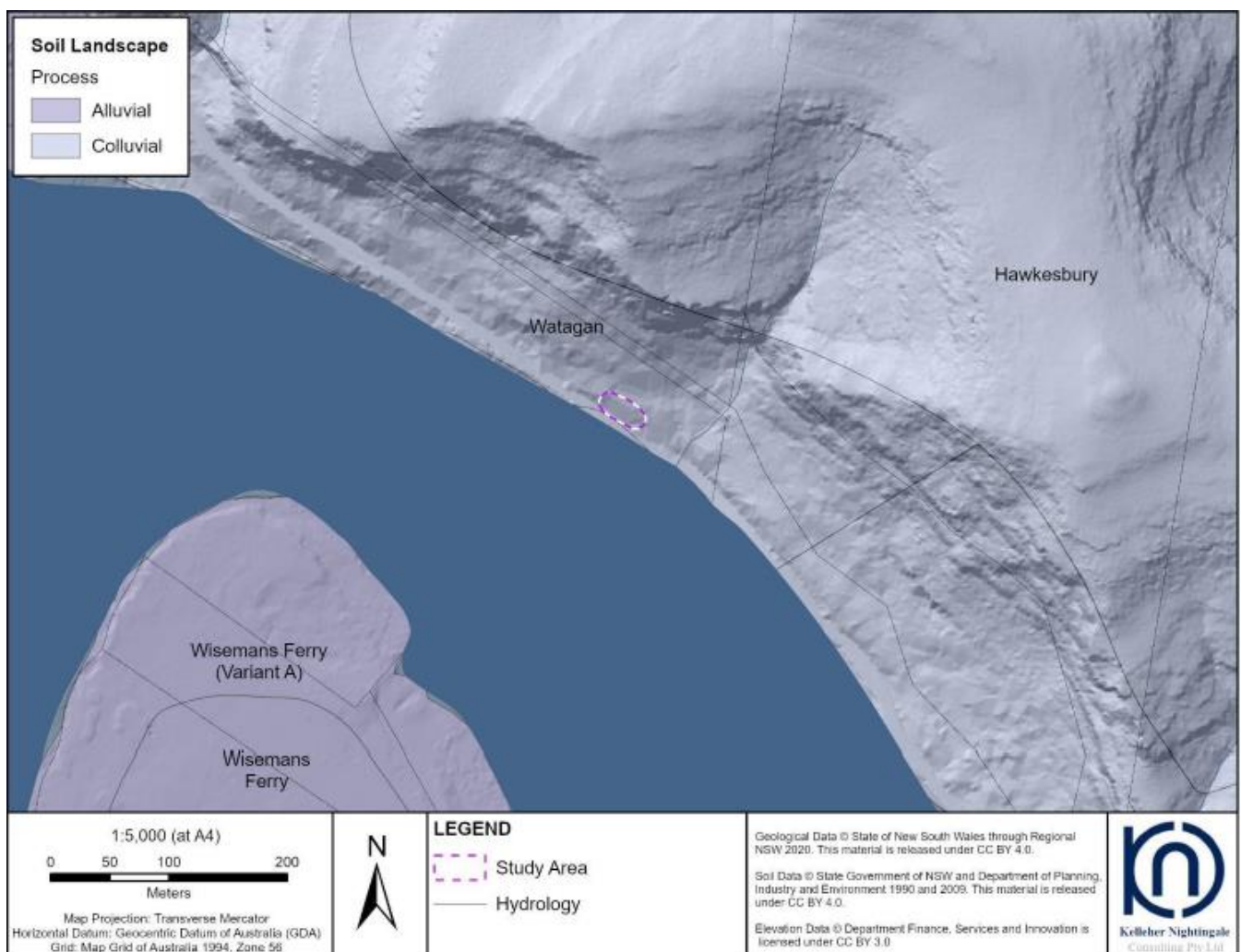


Figure 6-5 Soil types in the vicinity of the Project

6.2.1.3 Acid sulfate soils

Acid sulfate soils are the common name given to naturally occurring soils, commonly associated with low lying areas of fine-grained sediments and typically occur in lacustrine, estuarine, or swamp type environments, that contain iron sulfides (principally iron sulphide or iron disulphide or their precursors) which, on exposure to air, oxidise and create sulfuric acid.

Acid sulfate soil risk maps (Figure 6-6) were reviewed to determine the probability of acid sulfate soil being present across the project area. The project extent exists within an area categorised as Class 5, this classification is reflective of the area being less than 500m away from Class 1 and Class 2 areas to the south.



Figure 6-6 ASS classification in the vicinity of the Project.

6.2.1.4 Contamination

At the time of writing there is no evidence of contaminated land within or directly adjacent to the Project.

6.2.1.5 Surface water bodies

The Project work area is located directly adjacent to the Hawkesbury River to the south and MacDonald River to the North West.

6.2.1.6 Flooding

Settlers Road sits partially within flood liable land, as identified within the Central Coast Council's flood precinct mapping and shown in Figure 6-7. The proposed modification will remediate an area damaged from heavy rainfall and previous flooding downstream during the preceding 2 years. Importantly, the proposal will not change flood behaviour patterns.

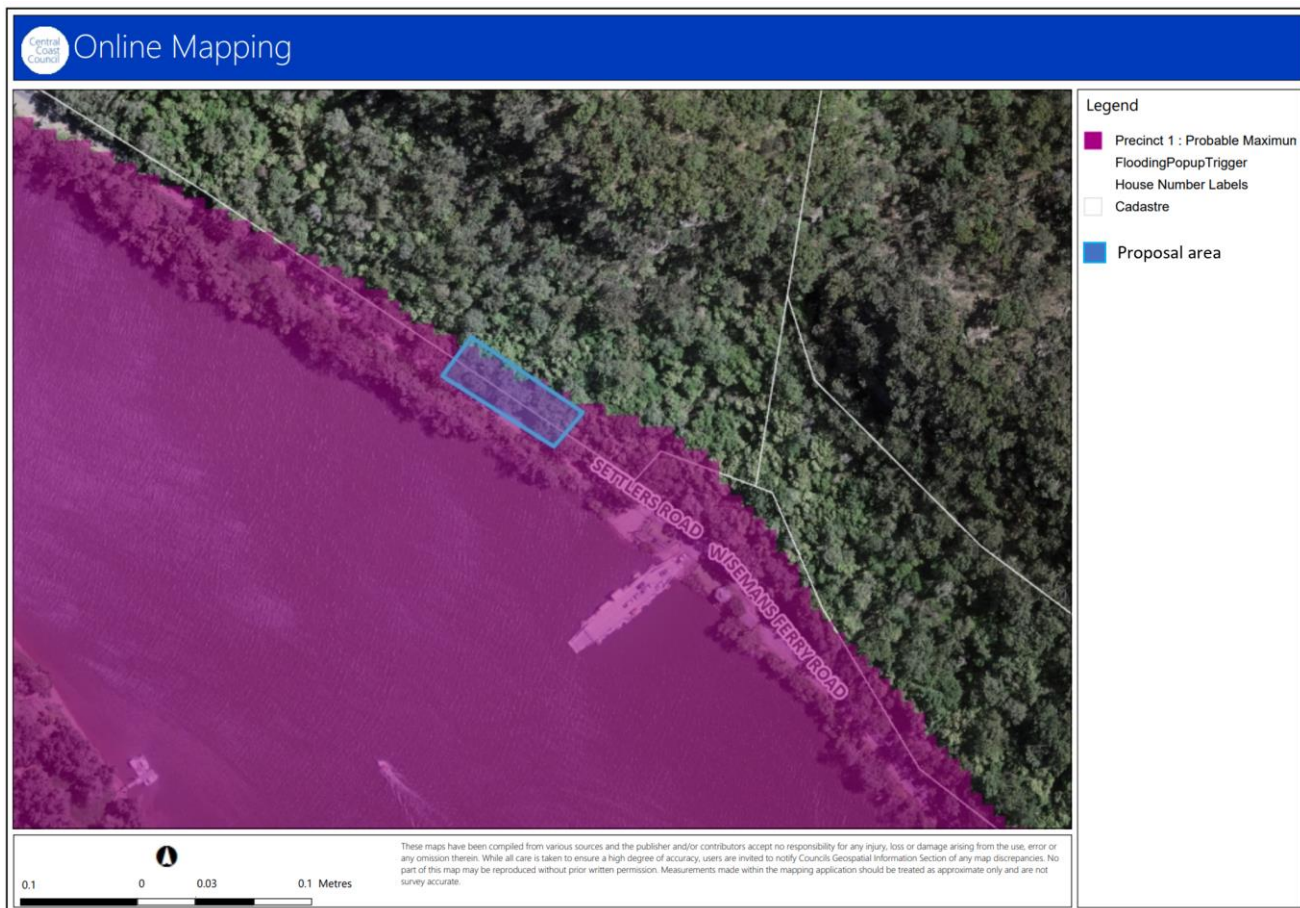


Figure 6-7 PMF Flood Mapping for Settlers Road (Source: <https://maps.centralcoast.nsw.gov.au/public/>).

6.2.2 Potential impacts

6.2.2.1 Erosion and Sedimentation

The proposed modification would involve earthworks to remove vegetation, scale the slope and remove all unconsolidated soil. The temporary exposure of soil to water runoff and wind could increase soil erosion potential, particularly as the Watagan soil landscape is prone to erosion when ground cover is removed. There is the potential for exposed soils – and other unconsolidated materials, such as spoil, sand and other aggregates – to be transported from the construction site into the Hawkesbury River.

Management and mitigation measures will be implemented in accordance with the relevant guidelines or standards and are expected to be adequate in controlling any potential impacts.

6.2.2.2 Acid sulfate soils

Owing to the proximity of the Project to high-risk Acid sulfate soil areas, there is a minimal chance they will be encountered during excavation. If ASS is encountered potential impacts may include:

- Damage to aquatic environments due to the release of sulfuric acid generated from oxidised acid sulfate soils during construction.
- Mobilisation of aluminium, iron and manganese from soils as a result of increased acidity from disturbance of acid sulfate soils.

If acid sulfate soils are encountered, they would be effectively managed in accordance with the Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee, 1998b). The manual includes procedures for the investigation, handling, treatment and management of such soils.

6.2.2.3 Surface Water

Key risks to surface water quality during construction would be increased sediment, nutrient loadings and potential mobilisation of contaminants associated with the following:

- Site disturbance activities including:
 - Removal of vegetation and trees
 - Topsoil stripping
 - Soil stockpiling and transport
 - Mud tracking of exposed/dirt covered work areas
- Accidental spills or leaks from vehicles, plant and machinery used, stored or re-fuelled on site could pollute receiving waters.
- Impacts to adjacent waterways are expected to be manageable through the implementation of standard management and mitigation measures.

6.2.3 Safeguards and management measures

Safeguards and management measures remain the same as the Settlers Road Project REF and have been included below.

Environmental Management Measures	
Erosion, Sedimentation and Water Quality	<p>S1. Erosion and sediment control measures are to be implemented and maintained to:</p> <ul style="list-style-type: none"> • Prevent sediment moving off-site and sediment laden water entering any water course, drainage lines, or drain inlets • Reduce water velocity and capture sediment on site • Minimise the amount of material transported from site to surrounding pavement surfaces • Divert clean water around the site (in accordance with the Landcom/Department of Housing Managing Urban Stormwater, Soils and Construction Guidelines (the Blue Book)). <p>S2. An Erosion and Sediment Control Plan (ESCP) will be prepared and progressively updated throughout the proposed work, where required. The ESCP will be prepared in accordance with the Blue Book and Roads and Maritime Specification G38.</p> <p>S3. Erosion and sediment control measures will not be removed until the works are complete and the work areas are stabilised.</p> <p>S4. Weather forecasts will be checked regularly prior to and during works, works would be scheduled around forecast rainfall.</p> <p>S5. Where rainfall is predicted to exceed 10 millimetres, the work areas that are accessible should be set up to behave as a “clean” water areas and have all disturbed, and or, exposed surfaces covered and all loose material cleaned up and removed from the work area.</p> <p>S6. If Acid Sulfate Soils are found within the site boundaries, an Acid Sulfate Soil Management Plan must be prepared and implemented in line with relevant legislation and guidelines.</p> <p>S7. There is to be no release of dirty water into drainage lines and/or waterways.</p> <p>S8. Refuelling of plant and machinery must be undertaken off site or in an impervious double bunded area away from drainage lines.</p> <p>S9. Water quality control measures are to be used to prevent any materials (e.g. concrete, grout, sediment etc.) entering drain inlets or waterways.</p>

6.3 Noise and vibration

6.3.1 Methodology

A desktop construction noise and vibration impact assessment was carried out for the proposal. The assessment was undertaken in general accordance with the following guidelines:

- NSW Department of Environment and Climate Change (DECC) Interim Construction Noise Guidelines (ICNG) 2009
- Roads and Maritime Construction Noise and Vibration Guidelines (CNVG) 2016
- NSW Department of Environment, Climate Change and Water (DECCW) Road Noise Policy (RNP) 2011

The operation of the proposal would not alter the existing noise environment and therefore an operational noise and vibration impact assessment has not been carried.

6.3.2 Existing environment

Typically, the noise environment in the area will correspond to the daily profile of the traffic movements along Settlers Road. It would be expected that the background noise levels along Settlers Road would be highest during the day-time and early evening, with a corresponding drop in noise levels between 8pm and 5am.

The location of sensitive receivers was determined through an inspection of aerial photography and available mapping data. Land use in the vicinity of the proposal site comprises national park and rural land. The nearest residential dwellings are located around 500 metres from the proposal area.

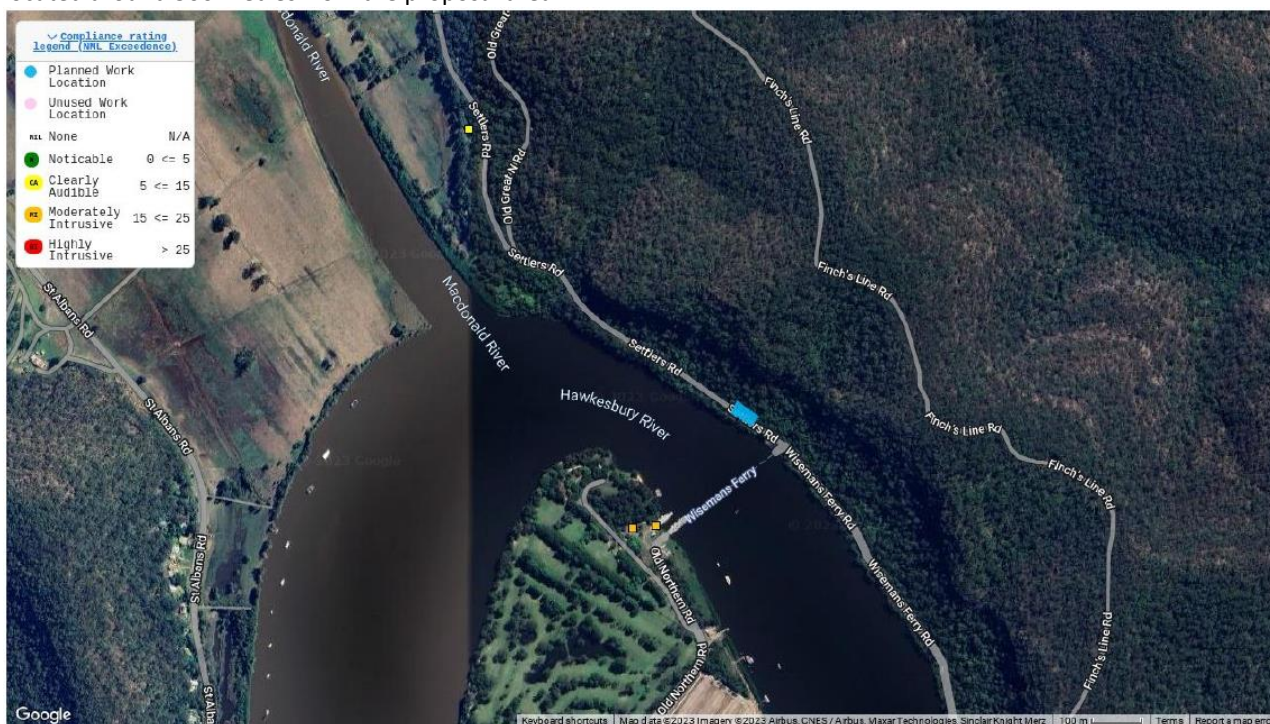


Figure 6-8 Receiver Buildings

6.3.3 Criteria

6.3.3.1 Background Noise Levels

The background noise levels along the study area have been estimated using the TfNSW/RMS CNVG Representative Noise Environment guidance. The existing traffic levels on Settlers Road are a major contributing factor to the background noise environment. The R1 representative noise environment has been selected for the noise assessment owing to the rural nature of the area. The background noise levels corresponding to the R1 Noise Environment are provided in Table 6-4.

Table 6-4 Background Noise levels

R1 Noise Environment (dB(A))		
Day	Evening	Night
40	35	30

6.3.3.2 Noise Management Levels

In NSW, noise impacts arising from construction activities are managed in accordance with the ICNG. The guideline has been developed to assist with the management of noise impacts, rather than to present strict numeric noise criteria for construction activities. The ICNG recommends establishing Noise Management Levels (NMLs) at receiver locations adjacent to the works, using information from the existing background noise levels. Where the NML may be exceeded and there is potential for adverse noise impacts to occur, appropriate management measures would be implemented.

Table 6-5 details the method for determining NMLs for residential receivers only, during standard and nonstandard working hours. While there are separate criteria for non-residential receivers, residential dwellings and commercial properties were identified for the proposal.

Table 6-5 Construction noise management levels – residential receivers (ICNG, DECC 2009)

Hours	Noise Management Level (NML)	Description
Recommended standard hours: Monday to Friday 7am– 6pm Saturday 8am– 1pm No work on Sundays or public holidays)	Noise affected RBL +10 dB(A)	The noise affected level represents the point above, which there may be some community reaction to noise. Where the predicted or measured $L_{Aeq(15\text{ min})}$ is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. The proponent should also inform all potentially impacted residents of the nature of work to be carried out, the expected noise levels and duration, as well as contact details.
	Highly noise affected >75 dB(A)	The highly noise affected level represents the point above which there may be strong community reaction to noise. Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account: <ol style="list-style-type: none"> 1. Times identified by the community when they are less sensitive to noise (such as before and after school for work near schools, or mid-morning or mid- afternoon for work near residences). 2. If the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
Outside recommended standard hours ('out-of- hours' work)	Noise affected RBL +5 dB(A)	A strong justification would typically be required for work outside the recommended standard hours. The proponent should apply all feasible and reasonable work practices to meet the noise affected level. Where all feasible and reasonable practices have been applied and noise is more than 5 dB(A) above the noise affected level, the proponent should then undertake negotiations with the community.

Using the background noise data from Table 6-4 and the ICNG requirements for residential receivers in Table 6-5, NMLs have been determined for the specified construction periods and are presented in Table 6-6.

Table 6-6 Construction NMLs

Receiver	Construction noise management level, $L_{Aeq}(15min)$					
	Standard recommended hours		Outside of standard recommended hours			
	Noise affected	Highly noise affected	Day	Evening	Night	Sleep disturbance
Commercial	70	-	-	-	-	-
Residential receivers	50	75	40	40	35	65

6.3.3.3 Sleep Disturbance

Noise impacts or events that can cause interruptions to sleeping patterns are considered separately to noise levels during works outside standard hours. The ICNG does not provide a specific method for assessment of potential sleep disturbance noise impacts; and guidance on the acceptability of these events is taken from the RNP.

The RNP provides targets for considering sleep disturbance impacts:

- Sleep disturbance screening criterion – used to identify situations where there is the potential for sleep disturbance.
- Sleep disturbance awakening criterion – levels below which awakening is unlikely to occur.

The sleep disturbance screening criterion recommends that where the $L_{A1}(1\text{ minute})$ does not exceed the $L_{A90,(15\text{ minute})}$ by 15 dB(A) or more, sleep disturbance impacts are likely to be maintained at an acceptable level. The $L_{A1,(1\text{ minute})}$ descriptor is meant to represent a typical maximum noise level when measured using a 'fast' time response. The sleep disturbance awakening guideline is the threshold at which an awakening reaction is likely to occur. Research discussed in the RNP identified this threshold to be an internal bedroom noise level of around 50 to 55 dB(A).

Windows often allow the greatest amount of sound transmission from outside to inside across a building facade. Allowing a 10 dB(A) reduction through an open window, external noise levels of about $L_{A1, 1\text{ min}} 65\text{ dB(A)}$ would generally give rise to internal noise goal of up 55 dB(A). Where levels are lower than this, the sleep disturbance goals are expected to be met.

6.3.4 Potential impacts

The proposed activities and equipment needed for works are summarised in Table 6-7. Anticipated overall $L_{Aeq\ 15\text{ minute}}$ sound power levels from equipment working during each activity are presented in the table, providing worst case emission estimates for the identified activities. Usage factors have been applied to the sound power levels to account for the expected proportion of 'on time' of each item of equipment over the assessment period.

Assumed sound power levels and the ultimate predicted noise levels will depend on the number of plant items operating at any one time and their precise location relative to a sensitive receiver. For this assessment, equipment was assumed to be working at the closest location relative to each receiver and represents a worst-case assessment. Where activity moves away from each receiver, or less equipment is operating, predicted levels will decrease accordingly.

Table 6-7 Indicative Activities and Equipment list

Phase	Activity	Equipment	SWL	Activity SWL
1	Site establishment- Vegetation removal and site preparation	Mobile Crane (20 tonne)	100	114
		Material Transport Vehicle	95	
		Hand tools	90	

		Chain saw (petrol)	114	
		Truck (10 tonne)	98	
		Excavator (6-8 tonne)	91	
2	Excavation/scaling	Excavator (6-8 tonne)	93	101
		Daymakers	93	
		Truck (10 tonne)	99	
		Hand tools	90	
3	Installation of rock bolts and ground support	Rock Anchor Drill*	104	105
		Hand Tools (electric)	90	
		Daymakers (4 Aspects)	93	
		Truck (10 tonne)	98	
4	Finishing works	Telehandler	96	111
		Vibratory roller (4 tonne)*	105	
		Paving Machine	110	
		Tipper Truck	94	
		Daymakers	93	

*denotes equipment that has an added 5dB penalty to account for 'annoying' characteristics in line with the ICNG.

Maximum noise levels are predicted to exceed night-time NML's by between 15-25dB at 2 sensitive receivers opposite the Project across the Macdonald River and at Wisemans Ferry. Several sensitive receivers are expected to experience noise levels between 0-5 dB above the night-time NML. Sleep disturbance is not expected to occur as a result of the proposal as potential noise impacts to receivers are forecast below 65dB(A).

The results demonstrate that during works it is unlikely that any residence will be significantly affected by noise originating from the proposed works. For out of hours work the risk of impact increases slightly, however it is very unlikely that any residences will be highly noise affected (>75 dB) at any time during the construction period. Despite this, as some works outside standard hours are required, programming should aim to complete noisy activities either in daytime hours or as early in the evening or night as possible.

6.3.5 Safeguards and management measures

Safeguards and management measures remain the same as the Settlers Road Project REF and have been included below.

Environmental Management Measures	
Noise and Vibration	<p>N1. Avoid swearing and unnecessary shouting or loud stereos/radios onsite.</p> <p>N2. No dropping of materials from height, throwing of metal items and slamming of doors.</p> <p>N3. Priority will be given to the use of quieter and less vibration emitting construction methods and plant alternatives.</p> <p>N4. All potentially affected residents will be informed at the commencement of works, working hours adhered to and the level and duration of noise to expect during construction.</p> <p>N5. Noisy activities would be scheduled to occur in the daytime where possible to avoid undue disturbance to surrounding residences.</p>

6.4 Other impacts

6.4.1 Existing environment and potential impacts

Environmental factors with negligible to minor impacts can be assessed in the table below.

Environmental factor	Existing environment	Potential impacts
Non-Aboriginal Heritage	<p>One locally listed heritage item is situated southeast of the project and outside the construction footprint. The Wisemans Ferry or 'Cable Ferry', item 59 on the Gosford Local Environmental Plan 2014, is a cable ferry across the Hawkesbury River.</p> <p>A large portion of Settlers Road, including the project area is however within the Australian Convict Sites (Old Great North Road Buffer Zone) World Heritage Site. The proposed modification is not within</p>	<p>The proposed work to rehabilitate the landslide along Settlers Road is unlikely to have a negative impact on the heritage values of the area as a whole. The project footprint, whilst within the curtilage of the Australian Convict Sites (Old Great North Road) listing, will not impact on any sections of the Old Great North Road.</p> <p>The project would help to preserve adjacent heritage items by rehabilitating the road to prevent further major landslides that could impact the heritage fabric of adjacent items.</p> <p>Overall, there is not expected to be any impacts to the locally listed heritage items adjacent to the proposal, or the World Heritage listing from the proposal.</p>
Aboriginal Heritage	<p>An Aboriginal heritage due diligence assessment has been undertaken for the proposed modification. This is attached as Appendix D and expands upon the due diligence assessment contained within the Project REF.</p> <p>Database searches were carried out using the AHIMS system. These searches noted 13 Aboriginal Heritage sites within a 4km radius of the project area. The findings of the addendum Aboriginal archaeological assessment are consistent with the archaeological findings as shown in the project REF.</p> <p>No Aboriginal archaeological objects/sites will be impacted by the proposed works within the addendum study area and the proposal may proceed with caution.</p>	<p>The due diligence assessment noted that the study area was assessed under the Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (OEH 2010a). No Aboriginal objects, archaeological sites or areas of archaeological potential were identified within the study area as a result of the due diligence assessment.</p> <p>Background research including AHIMS and other database searches, and review of previous archaeological investigations, did not identify any archaeological sites within the study area. Visual inspection confirmed that the study area has been disturbed by land use practices, natural erosional and colluvial processes and construction of the existing road alignment.</p> <p>It is therefore reasonable to assume that no Aboriginal objects or sites would be affected by the proposed remediation works within the study area. Based on the results of this assessment there are no Aboriginal archaeological heritage constraints to the proposal and according to the Heritage NSW Due Diligence Code of Practice for the Protection of Aboriginal</p>

Environmental factor	Existing environment	Potential impacts
		Objects in New South Wales, works can proceed with caution.
Air Quality	<p>Air quality in a region is influenced by a number of factors including the terrain, meteorology (weather patterns), historical trends in road traffic emissions and the current (ambient) and historical air quality environment.</p> <p>The Project is expected to involve earth moving activities and lead to an influx in heavy vehicles. These both have the potential to impact air quality in the immediate vicinity of construction activities.</p>	During construction some short-term localised impacts on air quality could be expected. These impacts are likely to be caused by emissions and generation of dust during the operation of plant and equipment. Providing that the appropriate safeguards are implemented, it is not expected that there would be any significant adverse impact on air quality during construction.
Landscape and Visual Characteristic	<p>The project footprint is directly adjacent to the Macdonald and Hawkesbury Rivers which is a major element of the landscape of the Hawkesbury Region.</p> <p>The landscape is dominated by the rivers and bushland to the north-east.</p>	<p>Overall, the proposed work is likely to have minor short-term impacts to the visual/scenic landscape owing to the requirement for vegetation clearing prior to remediation works.</p> <p>The clearing of vegetation along the landslide is not expected to be a long-term impact as sections of the project area would be left to revegetate naturally. In its current state the slope already provides a significantly different outlook than was present prior to flooding.</p> <p>The shotcrete or soil nailed areas of the slope are expected to have a minor negative impact to the visual amenity of this section of Settlers Road, particularly when compared to the previously vegetated slope, however, colouring the shotcrete a dark recessive colour would minimise the potential impact.</p> <p>The necessity of the shotcrete to ensure the ongoing stability of Settlers Road and the ongoing safety of the road users outweighs the minor visual impact in this instance.</p>
Traffic Management	<p>Settlers Road is primarily used by light vehicles with a small number of heavy vehicles likely using the road for deliveries to residences and businesses in the area.</p> <p>Settlers Road does not have a dedicated pedestrian path. As such it is not frequented by pedestrians. Additionally, owing to the rural location it is not a common thoroughfare for cyclists.</p>	<p>The work would temporarily increase heavy vehicle movements in the area owing to spoil handling, delivery of materials and plant. The Project would additionally require the closure of Settlers Road to traffic at times, while works high risk activities are taking place.</p> <p>While this would inconvenience the local community, construction would take place</p>

Environmental factor	Existing environment	Potential impacts
		24/7 to ensure the expedited remediation of the slope and road surface.
Land use and Property	The proposed modification would not lead to changes to land use in the locality. There are gravel and sealed driveways to access the private properties. Consultation with neighbouring landowners will be conducted prior to works commencing.	During the construction phase, access to all properties will be maintained to ensure minimal disruption to the residents.
Waste	<p>The proposal would not generate a significant amount of waste material. Any surplus material will be correctly classified in accordance with NSW EPA Waste Classification Guidelines disposed of at an appropriately licenced facility.</p> <p>Construction would generate waste streams typical of road infrastructure maintenance including:</p> <ul style="list-style-type: none"> • Green waste from cleared vegetation. • Oil, grease and other liquid wastes from the maintenance of construction plant and equipment. • General wastes and sewage from port-a-loos. • Concrete waste. 	<p>The volumes and types of waste generated by the proposal would be readily managed through the application of standard mitigation measures.</p> <p>Waste generated during construction of the Project will be managed in accordance with the following waste hierarchy priorities:</p> <ul style="list-style-type: none"> • Where waste reuse, recycling or recovery is not possible, waste will be treated and/or disposed of at a waste management facility or premise lawfully permitted to accept the materials or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste. • All waste generated during construction will be classified in accordance with the Waste Classification Guidelines (EPA 2014). • Waste generated offsite will not be received onsite for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence or waste exemption under the POEO Act, if such a licence is required in relation to that waste.
Cumulative Impacts	There are no cumulative impacts anticipated from the proposed modification.	

7 Environmental management

This chapter describes how the proposal will be managed to reduce potential environmental impacts throughout detailed design, construction and operation. A summary of site-specific environmental safeguards is provided and the licence and/or approval requirements required prior to construction are also listed.

7.1 Environmental management plans (or system)

A number of safeguards and management measures have been identified in the REF in order to minimise adverse environmental impacts, including social impacts, which could potentially arise as a result of the proposal. Should the proposal proceed, these safeguards and management measures would be incorporated into the detailed design and applied during the construction and operation of the proposal.

A Construction Environmental Management Plan (CEMP) will be prepared to describe the safeguards and management measures identified. The CEMP will provide a framework for establishing how these measures will be implemented and who would be responsible for their implementation.

The CEMP will be prepared prior to construction of the proposed modification and must be reviewed and certified by Hawkesbury City Council prior to the commencement of any on-site work. The CEMP will be a working document, subject to ongoing change and updated as necessary to respond to specific requirements.

7.2 Summary of safeguards and management measures

Environmental safeguards and management measures outlined in this REF will be incorporated into the detailed design phase of the proposal and during construction and operation of the proposal, should it proceed. These safeguards and management measures will minimise any potential adverse impacts arising from the proposed work on the surrounding environment. Note that the safeguards and management measures remain the same as the Settlers Road Project REF and have been summarised in Table 7-1 for completeness.

Table 7-1: Summary of safeguards and management measures

Safeguards for the proposed work	
Fauna and Flora	<p>B1. Avoidance of native vegetation clearing outside the approved Project footprint (0.13 ha), and an exclusion zone (No-Go-Zone) will be established and marked to indicate the limit of clearing boundary.</p> <p>B2. Prior to works, the applicant should commission the services of a qualified and experienced Ecological Consultant (minimum 3 years' experience) with a minimum tertiary degree in Science, Conservation, Biology, Ecology, Natural Resource Management, Environmental Science or Environmental Management. The Ecologist must be licensed with a current Department of Primary Industries Animal Research Authority permit and New South Wales Scientific License issued under the BC Act.</p> <p>B3. Where safe access is possible pre-clearing surveys would be undertaken by an ecologist for candidate threatened flora and fauna within the Project Footprint, prior to vegetation removal. The project ecologist is to mark and identify all hollow-bearing trees and stags identified within the Project Footprint as part of this assessment.</p> <p>B4. All habitat trees should be felled using a 'slow drop' technique. This involves knocking the trees to encourage any in situ fauna to vacate (e.g. using an excavator bucket) before slowly pushing the trees to the ground. Logs and log piles should be relocated outside of impact areas to minimise any loss of habitat.</p> <p>B5. An unexpected threatened species finds protocol is to be adopted and, in the case where a threatened species is encountered on site during construction or clearing activities, the procedure followed</p> <p>B6. Sedimentation and erosion control plan to be incorporated into the construction management plan</p> <p>B7. Hygiene protocols are to be implemented onsite during construction to prevent the spread of zoonotic and fungus diseases, and soil pathogens</p> <p>B8. Allocate all storage, stockpile, and laydown sites away from any vegetation that is planned to be retained. Avoid importing any soil from outside the site in order to avoid the potential of incurring indirect impacts on biodiversity values as this can introduce weeds and pathogens to the site. If materials are required to be imported for landscaping works, they are to be sterilised according to industry standards prior to importation to site.</p> <p>B9. Control measures (e.g. the directional lighting and task lighting) are to be installed to minimise glare and light spillage into adjoining vegetation to minimise potential impacts to fauna species.</p>
Erosion, Sedimentation and Water Quality	<p>S1. Erosion and sediment control measures are to be implemented and maintained to:</p>

	<ul style="list-style-type: none"> • Prevent sediment moving off-site and sediment laden water entering any water course, drainage lines, or drain inlets. • Reduce water velocity and capture sediment on site. • Minimise the amount of material transported from site to surrounding pavement surfaces. • Divert clean water around the site (in accordance with the Landcom/Department of Housing Managing Urban Stormwater, Soils and Construction Guidelines (the Blue Book)). <p>S2. An Erosion and Sediment Control Plan (ESCP) will be prepared and progressively updated throughout the proposed work, where required. The ESCP will be prepared in accordance with the Blue Book and Roads and Maritime Specification G38.</p> <p>S3. Erosion and sediment control measures will not be removed until the works are complete and the work areas are stabilised.</p> <p>S4. Weather forecasts will be checked regularly prior to and during works, works would be scheduled around forecast rainfall.</p> <p>S5. Where rainfall is predicted to exceed 10 millimetres, the work area would need to be set up to behave as a “clean” water area and have all disturbed, and or, exposed surfaces covered and all loose material cleaned up and removed from the main channel area.</p> <p>S6. If Acid Sulfate Soils are found within the site boundaries, an Acid Sulfate Soil Management Plan must be prepared and implemented in line with relevant legislation and guidelines.</p> <p>S7. There is to be no release of dirty water into drainage lines and/or waterways.</p> <p>S8. Refuelling of plant and machinery must be undertaken off site or in an impervious double bunded area away from drainage lines.</p> <p>S9. Water quality control measures are to be used to prevent any materials (e.g. concrete, grout, sediment etc.) entering drain inlets or waterways.</p>
Aboriginal Heritage	AH1. If any archaeological remains are discovered during works, work will cease immediately, and the discovery reported to the Council’s Heritage Adviser and the National Parks and Wildlife Service.
Non-Aboriginal Heritage	H1. In the event that unexpected Non-Aboriginal items are located during the works all works will cease immediately and Council’s Heritage Adviser or Heritage Council shall be contacted.
Noise and Vibration	<p>N1. Avoid swearing and unnecessary shouting or loud stereos/radios onsite.</p> <p>N2. No dropping of materials from height, throwing of metal items and slamming of doors.</p> <p>N3. Priority will be given to the use of quieter and less vibration emitting construction methods and plant alternatives.</p> <p>N4. All potentially affected residents will be informed at the commencement of works, working hours adhered to and the level and duration of noise to expect during construction.</p> <p>N5. Noisy activities would be scheduled to occur in the daytime where possible to avoid undue disturbance to surrounding residences.</p>
Air Quality	A1. Measures (including watering or covering exposed areas) are to be used to minimise or prevent air pollution and dust

	<p>A2. Vegetation or other materials are not to be burnt on site.</p> <p>A3. Vehicles and vessels transporting waste or other materials that may produce odours or dust are to be covered during transportation.</p> <p>A4. Stockpiles or areas that may generate dust are to be managed to suppress dust emissions in accordance with the Blue Book (Landcom/Department of Housing Managing Urban Stormwater, Soils and Construction Guidelines)</p>
Landscape and Visual Character	V1. Shotcrete will be colours and shaped to blend in with the natural surroundings. The shotcrete colour will be a recessive colour to better blend with the local area, dark vegetation and soil colours and shadows that are present on the slope for long periods of the day and year.
Traffic Management	T1. Where possible, current traffic movements and property accesses are to be maintained during the works. Any disturbance is to be minimised to prevent unnecessary traffic delays.
Land Use and Property	Nil
Waste	<p>WR1. Resource management hierarchy principles are to be followed:</p> <ul style="list-style-type: none"> a. Avoid unnecessary resource consumption as a priority; b. Avoidance is followed by resource recovery (including reuse of materials, reprocessing, recycling and energy recovery); c. Disposal is undertaken as a last resort (in accordance with the <i>Waste Avoidance & Resource Recovery Act 2001</i>). <p>WR2. There would be no illegal disposal or re-use of construction waste onto other land.</p> <p>WR3. Waste is not to be burnt on site.</p> <p>WR4. Waste material would not be left on site at the completion of works.</p> <p>WR5. Working areas are to be maintained, kept free of rubbish and cleaned up at the end of each working day.</p> <p>WR6. Waste would be disposed of in accordance with the <i>Waste Classification Guidelines</i> (EPA, 2014).</p>

7.3 Licensing and approvals

Table 7-2: Summary of licensing and approvals required

Instrument	Requirement	Timing
<i>Roads Act 1993</i>	<i>Road Occupancy Licence</i>	<i>Prior to the start of construction</i>

8 Conclusion

This chapter provides the justification for the proposed modification taking into account its biophysical, social and economic impacts, the suitability of the site and whether or not the proposal is in the public interest. The proposal is also considered in the context of the objectives of the EP&A Act, including the principles of ecologically sustainable development as defined in Section 193 of the Environmental Planning and Assessment Regulation 2021.

The proposed slope stabilisation works is subject to assessment under Division 5.1 of the EP&A Act. The REF has fully examined and considered all possible matters affecting or likely to affect the environment by reason of the proposed activity.

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

A number of potential environmental impacts from the proposal have been avoided or reduced during the concept design development and options assessment. The proposal as described in this addendum REF best meets the project objectives but would still result in some impacts on traffic and access, biodiversity, noise and landscape character. Safeguards and management measures as detailed in this REF would ameliorate or minimise these expected impacts. On balance the proposal is considered justified and the following conclusions are made.

8.1 Justification

Severe wet weather throughout 2022 and 2023 have caused slope instability along Settlers Rd, Wisemans Ferry. The road is currently operating in a reduced capacity, however there is a risk that the slope will continue to degrade and pose a greater safety concern to the public. The proposed modification reflects construction planning and is needed to ensure this section of Settlers Road can be remediated to a safe standard and usual capacity. While there are some environmental impacts due to the increased project and works area, they are predominantly minor, temporary and are adequately addressed through the safeguards listed in Section 7.3.

8.1.1 Social factors

The proposed modification is expected to have negligible negative social implications. It is recognised that the proposal will have some impacts to road users during construction as a result of lane closures. Impacts would include negligible visual impacts, traffic impacts and noise impacts, particularly during night works. However, impacts would be temporary in nature. The safeguards and mitigation measures included in the environmental assessment (refer to section 4) would minimise impacts during construction.

Positive social outcomes would be delivered by undertaking this proposal. Increasing the stability of the slope will reduce the risk of rock falls, subsequently improving the safety of road users and ensuring access along Settlers Road is maintained.

8.1.2 Biophysical factors

The proposal would have minimal biophysical impacts with the removal of native vegetation (refer to section 6.1). Vegetation removal would only occur in a sections of the slope that have been directly impacted by the slope instability and is unlikely to include any endangered or threatened ecological communities.

8.1.3 Economic factors

By undertaking this proposal HCC and CCC also reduce the ongoing costs and risks to road users associated with the existing maintenance regime at the slope.

8.1.4 Public interest

The proposal would be of public interest due to the safety benefit it would provide. The proposal would increase the stability of the slope and reduce the risk of rock falls, subsequently improving the safety of road users.

8.2 Objects of the EP&A Act

Table 8-1 Objects of the Environmental Planning and Assessment Act 1979

Instrument	Requirement
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 proposal improves road safety for users of Settlers Road. Including users of the National Park.
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 has been considered throughout the proposal, with the legislative context of ecological sustainable development considered in section 3.1 and the impact of the proposed modification is considered in detail in section 6. An options analysis was also undertaken for the proposal that has considered a range of constraints (refer Section 2.2) Outcomes of further investigations would be considered as part of detailed design, constructability assessments and the construction contractor's construction environmental management plans. Mitigation measures are proposed to be implemented to minimise direct and indirect impacts of the proposal.
1.3(c) To promote the orderly and economic use and development of land.	Improving this site would support the use of the road and access to the Dharug National Park. The proposal would also improve safety and reduce the ongoing costs and risks to road users
1.3(d) To promote the delivery and maintenance of affordable housing.	Not relevant to the proposal.
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.	Construction of the proposal would require the removal of trees. This does not include any endangered or threatened ecological communities. The impacts to vegetation have been minimised where possible. The safeguards and mitigation measures included in the environmental assessment (refer to section 7) would further minimise these risks
1.3(f) To promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage).	The proposal is considered to have no heritage impacts.
1.3(g) To promote good design and amenity of the built environment.	The proposal has been developed with the aim to minimise the overall impact of the proposal on existing landscape character of the site. However, construction of the proposal would result in negligible unavoidable visual impacts.

Instrument	Requirement
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 proposal
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 proposal.
1.3(j) To provide increased opportunity for community participation in environmental planning and assessment.	Section 5 outlines the community and stakeholder consultation carried out during various stages of the proposal.

8.2.1 Ecologically sustainable development

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

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

The precautionary principle

The precautionary principle deals with reconciling scientific uncertainty about environmental impacts 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.

This principle was considered during options development (refer to Chapter 2). The precautionary principle has guided the assessment of environmental impacts for this REF and the development of mitigation measures.

- The best-available technical information, environmental standards and measures have been used to minimise environmental risks.
- Specialist studies were incorporated to gain a detailed understanding of the existing environment.

Intergenerational equity

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

The proposal would maintain safe road usage along the road for use for future generations. The proposal would also protect the safety of future generations by maintaining the integrity of the rock structure at the site.

Conservation of biological diversity and ecological integrity

The proposal will result in minor biodiversity and ecological integrity impacts. Of the options considered, the selected option has the smallest impact while still achieving the proposal goals.

Improved valuation, pricing and incentive mechanisms

The principle of internalising environmental costs into decision making requires consideration of all environmental resources that may be affected by the carrying out of a proposal, including air, water, land and living things.

Valuation of environmental resources has shaped the proposal and mitigation measures. The proposal demonstrates value to the community in regard to improved safety. The design of the proposal has considered all environmental impacts and have tried to reduce impacts to the greatest extent practicable.

8.3 Conclusion

The proposed modification to remediate a section of Settlers Road, Wisemans Ferry that was damaged by a serious landslide during the severe weather event is subject to assessment under Division 5.1 of the EP&A Act. 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 (as relevant) of conservation agreements and plans of management under the NPW Act, biodiversity stewardship sites under the BC Act, wilderness areas, areas of outstanding value, impacts on threatened species and ecological communities and their habitats and other protected fauna and native plants. It has also considered potential impacts to matters of national environmental significance listed under the EPBC Act.

A number of potential environmental impacts from the proposal have been avoided or reduced during the concept 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 potential impacts on Flora and Fauna, Traffic and Transport, and Noise and Vibration. Safeguards and management measures as detailed in this addendum REF would ameliorate or minimise these expected impacts. The proposed modification would restore the damaged slope and reinstate the road to full working order, allowing the community to once again use Settlers Road at normal capacity. On balance the proposal is considered justified and the following conclusions are made.

8.3.1.1 Significance of impact under NSW legislation

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


8.3.1.2 Significance of impact under Australian legislation

The proposal is not likely to have a significant impact on matters of national environmental significance or the environment of Commonwealth land within the meaning of the *Environment Protection and Biodiversity Conservation Act 1999*. A referral to the Australian Government Department of Agriculture, Water and Environment is not required.


9 Certification

This review of environmental factors provides a true and fair review of the proposal 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 proposal.

Completed By:

Name	Adrian Broger
Signature	
Position	Senior Environmental Consultant – Hutchison Weller Pty Ltd
Date	17/01/2024

Checked by:

Name	Cameron Weller
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Position	Principal Environmental Consultant – Hutchison Weller Pty Ltd
Date	17/01/2024

Approved by (Central Coast Council):

Name	
Signature	
Position	
Date	

Approved by (National Parks and Wildlife Service):

Name	
Signature	
Position	
Date	

Appendix A Consideration of clause 171 factors and matters of national environmental significance and Commonwealth land

Clause 171(2) Checklist

In addition to the requirements of the *Is an EIS required?* guideline (DUAP 1995/1996) and the *Roads and Related Facilities EIS Guideline* (DUAP 1996) as detailed in the REF, the following factors, listed in clause 171(2) of the Environmental Planning and Assessment Regulation 2021, have also been considered to assess the likely impacts of the proposal on the natural and built environment.

Factor	Impact
<p>a) Any environmental impact on a community?</p> <p>The construction of the proposal may cause minor short-term environmental impacts on the community, such as delays to traffic, however the potential impacts would be managed with the implementation of the safeguards detailed in Section 7.</p> <p>The operation of the proposal would have a beneficial environmental impact on the community in the long-term from the reduced risk of road failure and re-establishment of normal travelling conditions along the road.</p>	<p>Short-term, minor, negative</p> <p>Long-term, positive</p>
<p>b) Any transformation of a locality?</p> <p>The construction of the proposal would result in temporary impacts for the existing locality, predominantly through negative visual amenity impacts associated with the placement and movement of construction plant and equipment, as well as the removal of vegetation.</p>	Short-term, minor, negative
<p>c) Any environmental impact on the ecosystems of the locality?</p> <p>The minor vegetation removal is considered to have a negligible impact on the ecosystems of the locality, however any potential impacts would be minimised with the implementation of the safeguards given in Section 7 of this REF.</p>	Minor, negative
<p>d) Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality?</p> <p>The construction of the proposal may result in reduction of aesthetic quality due the construction activities and equipment visible to residential and surrounding viewpoints. Dust and noise generation may potentially cause short-term impacts to environmental quality, however these impacts would be managed with the implementation of the safeguards detailed in Section 7.</p>	Short-term, minor, negative
<p>e) Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations?</p> <p>The proposal is unlikely to negatively affect any locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations.</p>	Nil
<p>f) Any impact on the habitat of protected fauna (within the meaning of the <i>National Parks and Wildlife Act 1974</i>)?</p> <p>The proposal is unlikely to significantly impact on the habitat of any protected fauna.</p>	Nil
<p>g) Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?</p> <p>The proposal would not endanger any species of animal, plant or other life form, whether living on land, in water or in the air.</p>	Nil
<p>h) Any long-term effects on the environment?</p> <p>The proposal would have positive long-term effects on the environment due to improved safety for road users and reduced risk of erosion /failure of the slope.</p>	Long-term, positive

Factor	Impact
<p>i) Any degradation of the quality of the environment? The construction of the proposal may potentially degrade the quality of the environment through minor accidental spills, erosion and sediment, and dust generation issues. These potential impacts would be managed with the implementation of the safeguards detailed in Section 7.</p>	Short-term, minor, negative
<p>j) Any risk to the safety of the environment? The construction of the proposal may potentially impact on safety of the environment due to road works and the movement of construction plant and equipment. The operation of the proposal would have a beneficial impact on the safety of the environment due to the reduced risk of slope failure and provision of safer travelling conditions for road users.</p>	Short-term, minor, negative Long-term, positive
<p>k) Any reduction in the range of beneficial uses of the environment? The construction of the proposal would result in a disruption to road use due to lane closures, potentially increasing travel time for road users</p>	Short-term, minor, negative
<p>l) Any pollution of the environment? The construction of the proposal may potentially result in pollution to the environment through minor accidental spills, erosion and sediment, and dust generation issues. These potential impacts would be managed with the implementation of the safeguards detailed in Section 7.</p>	Short-term, minor, negative
<p>m) Any environmental problems associated with the disposal of waste? Contaminated waste is not anticipated to be encountered during the proposed work. Any waste generated during construction of the proposal will be reused, recycled or disposed of appropriately in accordance with the safeguards detailed in Section 7.</p>	Short-term, minor, negative
<p>n) Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply? The required quantities of resources for the Project of would not create any significant demands on these resources.</p>	Nil
<p>o) Any cumulative environmental effect with other existing or likely future activities? The proposal would not result in any cumulative environmental effects with other projects as no projects are currently or known to be occurring in the vicinity of the project in the future.</p>	Nil
<p>p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions? The proposal will have no impact on coastal processes.</p>	Nil

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 the Commonwealth land are required to be considered to assist in determining whether the proposal should be referred to the Australian Government Department of Agriculture, Water and Environment. A referral is not required for proposed actions that may affect nationally listed threatened species, endangered ecological communities and migratory species. Impacts on these matters are still assessed as part of the REF in accordance with Australian Government significant impact criteria and taking into account relevant guidelines and policies.

Factor	Impact
a) Any impact on a World Heritage property?	Nil
b) Any impact on a National Heritage place?	Nil
c) Any impact on a wetland of international importance?	Nil
d) Any impact on a listed threatened species or communities?	Nil
e) Any impacts on listed migratory species?	Nil
f) Any impact on a Commonwealth marine area?	Nil
g) Does the proposal involve a nuclear action (including uranium mining)?	Nil
h) Additionally, any impact (direct or indirect) on the environment of Commonwealth land?	Nil

Appendix B Biodiversity Assessment

Flora and Fauna Assessment

Settlers Road Landslide Remediation
Wisemans Ferry, New South Wales
Chainage 60 to Chainage 100

Prepared by: Alex Graham (BAAS19040)
Final Report: January 2024



Document Control

Internal Project ID: CCC2

Project Title: Settlers Road Landslide Remediation, Wisemans Ferry, NSW
Chainage 60 to Chainage 100

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GLOSSARY

Abbreviation	Definition
amsl	Above mean sea level
BAM	Biodiversity Assessment Method 2020
BC Act	<i>Biodiversity Conservation Act 2016 (NSW)</i>
BDAR	Biodiversity Development Assessment Report
BOM	Bureau of Meteorology
CCC	Central Coast Council
DBH	Diameter at Breast Height
DPE	Department of Planning and Environment (formerly DPIE)
DPI	Department of Primary Industries
DPIE	Department of Planning, Industry and Environment (now DPE)
ECE	East Coast Ecology
EP&A Act	<i>Environmental Planning & Assessment Act 1979 (NSW)</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
FFA	Flora and Fauna Assessment
FM Act	<i>Fisheries Management Act 1994</i>
ha	Hectares
KFH	Key Fish Habitat
km	Kilometres
LGA	Local Government Area
Locality	The same meaning when describing a local population of a species or local occurrence of an ecological community.
m	metres
mm	millimetres
MNES	Matters of National Environmental Significance
NSW	New South Wales
PCT	Plant Community Type
SEPP	State Environmental Planning Policy
SIS	Species Impact Statement
Subject Land	The land depicted in Figure 1 .
TEC	Threatened Ecological Community

1. INTRODUCTION

1.1 The Proposed Activity

The Hawkesbury and Central Coast Local Government Areas faced their worst flooding in 60 years in March 2022. Hawkesbury and Central Coast Council propose to remediate a section of Settlers Road that was damaged by a serious landslide during the severe weather event. The slope above Settlers Road and the road surface was severely damaged by this landslide. Remediation works are therefore proposed to stabilise and rebuild the damaged slope and road.

Key features of the proposal would include:

- Site establishment works to allow for safe access, including any stabilisation required
- Removal of damaged vegetation along the slope, scaling of loose rock and unstable material
- Excavation works to cut back colluvial slope, and
- Roadway finishing and pavement works.

The location of the proposal is shown in **Figure 1**.

1.1.1 The Subject Land

The slope assessed within this report is referred to as the ‘Subject Land’ and has been defined using the Concept Design Report (GHD, 2023) in consultation with representatives from GHD, Hutchison Weller and Central Coast Council (CCC). The Subject Land comprises an approximately 40m length of Settlers Road, located about 50m northwest of the Wiseman Ferry car on/ off ramp.

1.1.2 Location

The Subject Land is situated within the Central Coast and Hawkesbury Local Government Area (LGA) and lies within the Dharug National Park estate. The Subject Land is located in the Yengo Interim Biogeographic Regionalisation for Australia (IBRA) Subregion, within the Sydney Basin IBRA Bioregion. The Hawkesbury LGA is located 55 kilometres northwest of Sydney CBD within the Hawkesbury River Valley. It is the largest LGA area in the Sydney basin with an area of approximately 2,800 square kilometres and an estimated population of 66,136 as at 2016. The Central Coast Local Government Area is likewise a large LGA that comprises an area of approximately 1,681 square kilometres. The Subject Land is located on the western extent of the Central Coast LGA.

The Subject Land comprises the south-southwest thick colluvial deposit facing foot slopes of a Hawkesbury Sandstone cliff line/ escarpment and typically comprises a, with some sandstone rock outcrops associated with partly buried rock benches. The colluvium comprises a mixture of soil and rock, containing rock blocks and extends for about 40m from the toe of the escarpment to Settlers Road. Much of the landslide debris and fallen trees which obstructed the roadway were removed by CCC and Jersey kerbs were installed close to the centreline of the road to move traffic away for cut/ slope toe area, consequently reducing the roadway in this area to a single lane with traffic light flow controls.

1.2 Scope of Assessment

East Coast Ecology Pty Ltd (ECE) was commissioned by CCC c/- Hutchison Weller to prepare a Flora and Fauna Assessment (FFA), including 5-Part Test and Assessment of Significance, for the proposed works associated with slope remediation works along Settlers Road, Wisemans Ferry (the proposed activity).

The overarching objective of this assessment was to evaluate the ecological values that occur within the Subject Land and identify how the proposed activity satisfies the relevant planning framework. This report discerns the likelihood of occurrence of any threatened entities (i.e. ecological communities and species) listed under the *Biodiversity Conservation Act 2016* (NSW) (BC Act) and the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act). The full scope of the assessment included:

- Background research to determine the likelihood for NSW and/ or Commonwealth threatened biota to occur within the Subject Land during any point of their lifecycle
- Assess any potential impacts to species and/ or communities listed under the BC Act and EPBC Act
- Establishing the likelihood of occurrence of migratory species and threatened ecological communities (TEC) as listed under the BC Act and/ or the EPBC Act
- Identifying and mapping the distribution of vegetation communities within the Subject Land
- Recording presence and the extent of any known or potential fauna habitat features such as nests, dreys, caves, crevices, culverts, pools, soaks, flowering trees, fruiting trees or hollow-bearing trees and provide recommendations for on-going management of these habitat features and any fauna present
- Determining potential ecological impacts or risks that may result due to the proposed works, and
- Recommendation of any controls or additional actions to be taken to protect or improve environmental outcomes of the activity.

The areas within this FFA have been defined using the Concept Design Report (GHD, 2023).



Figure 1. The location of the Subject Land.

1.3 Legislative Context

1.3.1 *Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)*

The Commonwealth EPBC Act provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places which are considered Matters of National Environmental Significance (MNES). Under the EPBC Act, approval is required for actions that have, will have, or are likely to have a significant impact on MNES.

Several EPBC listed threatened species have potential to utilise the Subject Land. The proposed activity will not result in a 'significant impact' on any MNES (**Appendix B**) and a referral to the Australian Government Minister for the Environment is not required.

1.3.2 *Environmental Planning and Assessment Act 1979*

The *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) establishes the system of environmental planning and assessment in NSW. The proposed activity is being assessed under Division 5.1 of the EP&A Act via a Review of Environment Factors (REF). This report provides input into the REF and environmental impact assessment process by providing assessment specific to matters of biodiversity.

An REF has been prepared to satisfy CCC's duties under s.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 that activity" and s.5.5 in making decisions on the likely significance of any environmental impacts. This FFA forms part of the REF being prepared for the Settlers Road Landslide Remediation Project and assesses the biodiversity impacts of the proposed activity to meet the requirements of the EP&A Act.

1.3.3 *Biodiversity Conservation Act 2016*

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

Several BC Act listed threatened species have the potential to occur within, or utilise, the Subject Land. The BC Act requires that the significance of the impact on threatened species, populations and threatened ecological communities is assessed using the test listed in Section 7.3 of the BC Act. Where a significant impact is likely to occur, a Species Impact Statement (SIS) must be prepared in accordance with the Environment Agency Head's requirements, or a Biodiversity Development Assessment Report (BDAR) must be prepared by an accredited assessor in accordance with the Biodiversity Assessment Method (BAM) (DPE, 2020a). The proposed activity will not result in a 'significant impact' on any threatened entities and therefore the Biodiversity Offset Scheme is not triggered (**Appendix A**). As such, an SIS or a BDAR is not required. The Subject Land is not located within any Areas of Outstanding Biodiversity Value.

1.3.4 Biosecurity Act 2015

The *Biosecurity Act 2015* (NSW) provides a framework for the prevention, elimination and minimisation of biosecurity risks posed by an activity as a matter of biosecurity. As defined in Part 3, section 23 of this Act, any non-conformance by an individual is defined as guilty of an offence.

One priority weed, *Lantana camara*, was identified within the Subject Land. Suitable mitigation measures (**Section 7.2**) have been provided to appropriately manage weeds within the impact areas in accordance with the *Biosecurity Act 2015*.

1.3.5 Fisheries Management Act 1994

The *Fisheries Management Act 1994* (NSW) (FM Act) aims to conserve, develop and share the fishery resources of NSW for the benefit of present and future generations including conserving fish stocks and key fish habitats and promoting ecologically sustainable development.

The closest Key Fish Habitat (KFH) occurs within approximately 20m of the Subject Land, within the Hawkesbury River. The proposed activity does not require works within the watercourse, nor did marine vegetation protected under the FM Act occur within the Subject Land. As such, the activity would not impact upon KFH, nor are there any legislative requirements or notifications required under this Act.

1.3.6 Water Management Act 2000

The main objective of the *Water Management Act 2000* (NSW) (WM Act) is to manage NSW water in a sustainable and integrated manner that will benefit today's generations without compromising future generations' ability to meet their needs. Section 91E of the Act establishes an approval regime for controlled activities within waterfront land. However, clause 41 of the Water Management (General) Regulation 2018 provides an exemption for public authorities in relation to all controlled activities on waterfront land. Therefore, approval under the WM Act is not required.

1.3.7 State Environmental Planning Policy (Resilience and Hazards) 2021

The State Environmental Planning Policy (Resilience and Hazards) 2021 (Resilience and Hazards SEPP) commenced on the 1st of March 2022 and replaces the following former SEPPs:

- State Environmental Planning Policy (Coastal Management) 2018
- State Environmental Planning Policy 33 – Hazardous and Offensive Development, and
- State Environmental Planning Policy 55 – Remediation of Land.

The Subject Land is situated within the 'Coastal Use Area' and 'Coastal Environment Area' and is therefore subject to the relevant controls.

1.3.7.1 Development on land within the coastal environment area

Development consent must not be granted to development on land that is within the coastal environment area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following—

- (a) the integrity and resilience of the biophysical, hydrological (surface and groundwater) and ecological environment.

- (b) coastal environmental values and natural coastal processes.
- (c) the water quality of the marine estate (within the meaning of the Marine Estate Management Act 2014), in particular, the cumulative impacts of the proposed development on any of the sensitive coastal lakes identified in Schedule 1.
- (d) marine vegetation, native vegetation and fauna and their habitats, undeveloped headlands and rock platforms.
- (e) existing public open space and safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability.
- (f) Aboriginal cultural heritage, practices and places.
- (g) the use of the surf zone.

Given the nature of the activity (i.e. slope remediation), opportunities to change the project design are limited and defined by geotechnical engineering requirements. With the observation of standard management measures listed within the REF and this FFA (**Section 7.2**), the works would have minimal impacts on the coastal environment area.

1.3.7.2 Development on land within the coastal use area

Development consent must not be granted to development on land that is within the coastal use area unless the consent authority—

- (a) has considered whether the proposed development is likely to cause an adverse impact on the following—
 - i. existing, safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability.
 - ii. (ii) overshadowing, wind funnelling and the loss of views from public places to foreshores.
 - iii. (iii) the visual amenity and scenic qualities of the coast, including coastal headlands.
 - iv. (iv) Aboriginal cultural heritage, practices and places.
 - v. (v) cultural and built environment heritage.
- (b) is satisfied that—
 - i. the development is designed, sited and will be managed to avoid an adverse impact referred to in paragraph (a).
 - ii. (ii) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact.
 - iii. (iii) if that impact cannot be minimised—the development will be managed to mitigate that impact.
- (c) has taken into account the surrounding coastal and built environment, and the bulk, scale and size of the proposed development.

Given the nature of the activity (i.e. slope remediation), opportunities to avoid and minimise impacts, or adapt the project design are limited and defined by geotechnical engineering requirements. With the

observation of standard management measures listed within the REF and this FFA (**Section 7.2**), the works would have minimal impacts on the coastal use area.

1.3.8 State Environmental Planning Policy ((Biodiversity and Conservation) 2021

Section 2.7(1) of this SEPP states that an authority to clear vegetation under this policy is not required if it is a clearing authorised under s60(O) of the *Local Land Services Act 2013*. Section 60(O) provides an exemption for clearing under Part 5 of the EP&A Act and therefore consent is not required under the SEPP (Biodiversity and Conservation).

2. METHODOLOGY

2.1 Background Research

A thorough literature review of local information relevant to the Subject Land was undertaken. Searches using NSW Wildlife Atlas (BioNet) (DPE, 2023a) and the Commonwealth Protected Matters Search Tool (PMST) (DCCEEW, 2023) were conducted to identify all current threatened flora and fauna, as well as migratory fauna records, within a 5km radius of the Subject Land. These data were used to assist in establishing the presence or likelihood of any ecological values as occurring on or adjacent to the Subject Land and helped inform our ecologists on what to look for during the site assessment.

Soil landscape and geological mapping, as well as existing vegetation mapping, were examined to assist in determining whether any threatened flora or ecological communities could be present. The following technical resources were comprised in the preparation of this report:

- State and Commonwealth datasets:
 - EPBC Protected Matters Search Tool (DCCEEW, 2023)
 - NSW BioNet. The website of the Atlas of NSW Wildlife (DPE, 2023a)
 - NSW BioNet. Threatened Biodiversity Data Collection (DPE, 2023b)
 - NSW BioNet. Vegetation Classification System (DPE, 2023c)
 - NSW Government Spatial Services: Search and Discovery - Historical, Aerial and Satellite Imagery (Spatial Services, 2023a)
 - NSW Government Spatial Services: Six Maps Clip & Ship (Spatial Services, 2023b)
 - BAM Important Habitat Maps
 - Key Fish Habitat Maps – Hawkesbury-Nepean (DPI, 2023b)
- Vegetation and soil mapping:
 - The NSW State Vegetation Type Map (DPE, 2023d)
 - eSPADE v2.2.0 (DPIE, 2023)
- NSW State guidelines:
 - Surveying threatened plants and their habitats - NSW survey guide for the Biodiversity Assessment Method (DPE, 2020b)
 - Threatened Species Survey and Assessment: Guidelines for developments and activities. Working Draft (DEC, 2004b)

Species from both the BioNet and PMST online searches were combined to produce a list of threatened species, populations and communities that are likely occur within the Subject Land.

2.2 Permits and Licences

The biodiversity assessment was conducted under the terms of ECE's Scientific Licence issued by the NSW Department of Planning and Environment (SL102667). Fauna survey was conducted under approval RVF22/2367 from the NSW Animal Care and Ethics Committee.

2.3 Native Vegetation, Threatened Ecological Communities and Vegetation Integrity Methods

2.3.1 Existing Information

A review of the State Vegetation Type Map (DPE, 2023d) was used to assist in the identification of Plant Community Types (PCTs) within and surrounding the Subject Land. The PCT of ‘best-fit’ was determined based on the floristic descriptions within the Vegetation Classification System database (DPE, 2023c).

2.3.2 Mapping Native Vegetation Extent

The extent of native vegetation within the Subject Land was determined through a field assessment with the aid of a GPS-enabled tablet.

2.4 Threatened Flora Survey Methods

2.4.1 Review of Existing Information

Threatened flora with potential to occur within the Subject Land and immediate surrounds were identified following review of BioNet and the PMST. Soil mapping (DPIE, 2023) and topography (Google Earth) were also used to provide further context on habitat constraints for threatened flora.

2.4.2 Field Surveys

To determine whether any suitable habitat for threatened flora species was present, a survey was undertaken from Settlers Road using binoculars. Parallel field traverses in accordance with the ‘Surveying threatened plants and their habitats - NSW survey guide for the Biodiversity Assessment Method’ (DPE, 2020b) could not be undertaken for safety reasons (ongoing landslide).

2.5 Threatened Fauna Survey Methods

2.5.1 Review of Existing Information

Threatened fauna with potential to occur within the Subject Land and immediate surrounds were identified following review of BioNet and the PMST. Soil mapping (DPIE, 2023) and topography (Google Earth) were also used to provide further context on habitat constraints for threatened fauna.

2.5.2 Habitat Constraints

A field survey was undertaken to identify any habitat constraints (e.g. waterbodies, rocky areas, tree hollows), including microhabitat, present within the Subject Land and immediate surrounds. Potential habitat constraints within the broader area (500m buffer) were assessed using Google Earth, historical aerial imagery (Spatial Services, 2023a), soil landscape mapping (DPIE, 2023) and recent vegetation mapping (DPE, 2023d)

2.5.3 Field Surveys

No targeted surveys for fauna were undertaken. To determine whether any threatened fauna species were present, targeted habitat surveys were undertaken from Settlers Road using binoculars.

2.6 Weather Conditions

Surveys were undertaken on 29th November 2023 within and immediately surrounding the Subject Land. Weather conditions taken from the nearest weather station (Mangrove Mountain AWS (station 061375)) in the lead up and during the field survey are outlined in **Table 1**.

Table 1. Weather conditions taken from the nearest weather stations (Station number 061375) in the lead up and during the field survey (BOM, 2023).

Timing/activities	Date	Day	Temperature		Rainfall (mm)
			Min	Max	
Lead up to the survey	22/11/2023	Wednesday	14.2	25.1	0
	23/11/2023	Thursday	15.9	23.0	0
	24/11/2023	Friday	17.2	22.6	11.6
	25/11/2023	Saturday	16.5	22.6	10.8
	26/11/2023	Sunday	16.6	30.8	9.6
	27/11/2023	Monday	15.8	26.3	0
	28/11/2023	Tuesday	18.0	22.1	0
Site Assessment & Habitat Survey	29/11/2023	Wednesday	18.7		6.2

Dark border indicates survey date.

2.7 Limitations

Not all flora and fauna species could be directly surveyed for during the site assessment. These species include nocturnal fauna and cryptic flora with flowering times outside of the survey period. For safety reasons, most of the Subject Land could not be accessed due to the ongoing landslip. The survey was carried out from Settlers Road behind safety barriers aided by binoculars. The presence of nocturnal and cryptic species was assessed based on habitat constraints and historical records.

3. SITE CONTEXT

3.1 Landscape Features

3.1.1 Rivers, streams, estuaries and wetlands

No mapped watercourses occur within the Subject Land. The Subject Land is flanked by the Hawkesbury River and its tributaries. The Hawkesbury River, a fourth-order watercourse, occurs approximately 20m southwest of the Subject land. The Subject Land therefore lies within its associated riparian buffer zone.

3.1.2 Topography, Geology and Soils

The elevation within the Subject Land grades sharply from approximately 30 above sea level (asl) in the southern extent to approximately 45m asl in the northern extent.

3.1.3 Karst, Caves, Crevices, Cliffs, Rocks or Other of Geological Features of Significance

The Subject Land did not contain areas of geological significance (karsts, caves, cliffs and crevices).

3.1.4 Areas of Outstanding Biodiversity Value

No Areas of Outstanding Biodiversity Value occur on the Subject Land or surrounding area.

3.1.5 NSW (Mitchell) Landscapes

Mitchell Landscapes (Mitchell, 2002) groups ecosystems into meso-ecosystems representing larger natural entities based on topography and geology. The naming of ecosystems and meso-ecosystems was standardised so that each name provided location information and a meaningful descriptive landscape term. The Subject Land occurs within the 'Hawkesbury Gorge' Mitchell Landscape Ecosystem.

3.1.5.1 Hawkesbury Gorge

Steep stepped slopes with frequent cliffs to 15m high on horizontal Triassic quartz sandstone, general elevation 0 to 200m, local relief 150m. Extensive rock outcrop and limited soil, sands and loamy sands on benches and within joint crevices. Open forest of Red Bloodwood (*Corymbia gummifera*), Grey Gum (*Eucalyptus punctata*), Yellow Bloodwood (*Corymbia eximia*), Scribbly Gum (*Eucalyptus haemostoma*), Forest Oak (*Allocasuarina torulosa*) and Smooth-barked Apple (*Angophora costata*) with diverse shrubs on ridges and upper slopes. Gully forest of smooth-barked apple, Sydney Peppermint (*Eucalyptus piperita*), Blue-leaved Stringybark (*Eucalyptus agglomerata*) and Turpentine (*Syncarpia glomulifera*), with Round-leaved Gum (*Eucalyptus deanei*), Sydney Blue Gum (*Eucalyptus saligna*) and Rough-barked Apple (*Angophora floribunda*) in the most sheltered sites. Plant species differ with slope aspect and fire history.

4. RESULTS: NATIVE VEGETATION

4.1 Plant Community Types

4.1.1 Historically Mapped Vegetation

The State Vegetation Type Map (DPE, 2023d) indicated the presence of one Plant Community Type (PCT) within the Subject Land:

- PCT 3238: Hunter Range Colluvial Apple-Gum Forest.

The State Vegetation Type Map is presented in **Figure 2**.

4.1.2 Field-validated Vegetation

Site assessment by ECE confirmed the presence of this community:

- PCT 3238: Hunter Range Colluvial Apple-Gum Forest.

The vegetation within the Subject Land is detailed in **Table 4** and displayed in **Figure 3**.

Vegetation within the Subject Land has been assessed as aligning with the BioNet Vegetation Classification PCT identified within **Table 2**. A detailed description of the PCT is provided in the following subsections.

Table 2. PCT identified within the Subject Land.

PCT ID	PCT Scientific Name	Area within the Subject Land (ha)
3238	Hunter Range Colluvial Apple-Gum Forest	0.13
Total Area		0.13

4.2 Justification for PCT Selection

PCT selection for native vegetation was undertaken using information and databases provided in the BioNet Vegetation Classification System (DPE, 2023c). The following selection criteria were used in the PCT Filter Tool to develop a PCT shortlist:

- IBRA Bioregion: Sydney Basin
- IBRA Subregion: Yengo
- LGA: Central Coast Council
- Vegetation Formation: Wet Sclerophyll Forest
- Dominant Species: *Angophora floribunda*, *Eucalyptus punctata*, *Allocasuarina torulosa*, *Eucalyptus crebra*, *Eucalyptus eugenioides*

This process delivered a selection of six candidate PCTs that occur within the correct distribution, have the correct vegetation formation and that have all dominant species (**Table 3**). The steps taken to justify the presence/ absence of the candidate PCTs within the Subject Land are detailed in **Table 3**.


Table 3. Output from the PCT Filter Tool (DPE, 2023c) and subsequent shortlisting of candidate PCTs.

Plant Community Type (PCT)	Subject Land within suitable geology, landscape position and vegetation formation.
PCT3237: Hunter Range Blue Gum Gully Forest	No. The Subject Land is located within the correct distribution and exhibits the correct species, however, the canopy of this PCT “commonly includes a high cover of one of two blue gum eucalypt species, <i>Eucalyptus deanei</i> or rarely <i>Eucalyptus saligna</i> ” both of which were absent within the Subject Land.
PCT3238: Hunter Range Colluvial Apple-Gum Forest	<p>Yes. This PCT “frequently includes <i>Angophora floribunda</i>, commonly in association with <i>Eucalyptus punctata</i> and Stringybarks (<i>Eucalyptus eugenoides</i>, <i>Eucalyptus sparsifolia</i>), Ironbarks (<i>Eucalyptus crebra</i>, <i>Eucalyptus fibrosa</i>) and Red Gums (<i>Eucalyptus amplifolia</i>, <i>Eucalyptus tereticornis</i>)”. The Subject Land is located within the correct distribution and exhibits the correct species assemblage.</p> <p>This PCT was determined to be the ‘best-fit’.</p>
PCT3239: Hunter Range Sheltered Grey Gum Forest	<p>No. The Subject Land is located within the correct distribution and exhibits the correct species, “the most frequently occurring tree species are <i>Eucalyptus punctata</i> and <i>Syncarpia glomulifera</i>” within this PCT. Within the Subject Land, <i>Angophora floribunda</i> was the dominant canopy species, with only occasional <i>E. punctata</i>. <i>Syncarpia glomulifera</i> was absent, although may have been present prior to the landslip.</p> <p>Although a strong fit, the ‘best-fit’ PCT was determined to be PCT 3238.</p>
PCT3241: Lower North White Mahogany-Spotted Gum Moist Forest	No. The Subject Land is located within the correct distribution and exhibits the correct species, however, the canopy of this PCT “very frequently includes a high cover of <i>Eucalyptus acmenoides</i> and <i>Corymbia maculata</i> ” both of which were absent within the Subject Land.
PCT3244: Lower North Spotted Gum-Mahogany-Ironbark Sheltered Forest	No. The Subject Land is located within the correct distribution and exhibits the correct species, however, the canopy of this PCT “frequently includes <i>Corymbia maculata</i> ” which was absent within the Subject Land.
PCT3258: Sydney Basin Creekflat Blue Gum-Apple Forest	No. This PCT occurs “on sandy alluvial creek flats in dissected sandstone plateaus mainly in the greater Blue Mountains”, whereas the Subject Land occurs on sheltered Hawkesbury sandstones.



Figure 2. Vegetation communities within/ surrounding the Subject Land.

Table 4. Description of vegetation within the Subject Land, that will be impacted by the activity.

PCT3238: Hunter Range Colluvial Apple-Gum Forest	
	
Vegetation Formation	Wet Sclerophyll Forests (Grassy sub-formation)
Extent within Subject Land (approximate)	0.13ha
Description of the vegetation within the Subject Land	
<p>The vegetation within the Subject Land was generally in poor condition, with localised patches of priority and environmental weeds mostly adjoining Settlers Road. Within the Subject Land, the vegetation was dominated by <i>A. floribunda</i> with scattered <i>E. punctata</i> and <i>E. eugenoides</i>. The sub-canopy was co-dominated by <i>Syzygium smithii</i> and <i>Allocasuarina toulouosa</i>. Evidence of an ecotone with PCT 3038: Sydney Coastal Coachwood Gallery Rainforest was apparent adjoining gullies and riparian areas, reflected by an increase in <i>Backhousia myrtifolia</i>. Large landslips have devegetated the ground and mid-stratum throughout the Subject Land resulting in exposed rock and bare earth. Due to the presence of overhanging native canopy, they have been included within this vegetation type. Where landslips had occurred, the colonising species were dominated by environmental weeds.</p>	

PCT3238: Hunter Range Colluvial Apple-Gum Forest

Description of PCT 3238 in BioNet

A tall to very tall sclerophyll open forest with a mid-stratum of soft-leaved and dry species and grassy ground cover on sandy colluvial soils on flats and benches around the Hunter Range in the northern Sydney Basin bioregion. This PCT is reasonably widespread in the sandstone ranges of Wollemi and Yengo national parks, the Putty and Howes Valley area and the Central Coast hinterland. The canopy very frequently includes *Angophora floribunda*, commonly in association with *Eucalyptus punctata* and Stringybarks (*Eucalyptus eugenioides*, *Eucalyptus sparsifolia*), Ironbarks (*Eucalyptus crebra*, *Eucalyptus fibrosa*) and Red Gums (*Eucalyptus amplifolia*, *Eucalyptus tereticornis*). The mid-dense small tree layer almost always includes acacias such as *Acacia parvipinnula*, *Acacia parramattensis* or *Acacia implexa*, very frequently in association with *Exocarpos strictus* or commonly with *Allocasuarina torulosa*. The shrub layer is sparse however almost always includes *Persoonia linearis*. The mid-dense ground layer is typically comprised of grasses, soft-leaved forbs, twiners and a hardy fern. *Microlaena stipoides* and *Cheilanthes sieberi subsp. sieberi* are almost always present with *Dichondra repens*, *Lobelia purpurascens*, *Vernonia cinerea* and *Billardiera scandens* all very frequent. This PCT occurs in a dissected sandstone plateau below 330 metres asl in a warm, moist climate. This PCT floristically overlaps with PCT 3634 which occurs on sandy soils near Quorrobolong however the *Leptospermum* and *Melaleuca* species that are prominent in PCT 3634 are rare in this PCT.

BC Act 2016 Status	Not listed.
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EPBC Act 1999 Status	Not listed.
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4.3 Threatened Ecological Communities

No threatened ecological communities were identified within the Subject Land.

4.4 Groundwater Dependent Ecosystems (GDE)

Assessment of the potential for the Subject Land to support groundwater dependent ecosystems was carried out using the Commonwealth's Bureau of Meteorology Groundwater Dependent Ecosystems Atlas (BOM, 2023a). No vegetation within or directly adjoining the Subject Land has been mapped as a Groundwater Dependent Ecosystem.

4.5 Wildlife Connectivity Corridors

The Subject Land consists of an existing road corridor, that adjoins the Dharug National Park, which provides large areas of contiguous habitat that support movement of threatened species across the broader landscape.



Figure 3. Field-validated vegetation communities.

5. RESULTS: THREATENED SPECIES

5.1 Threatened Flora

Database searches revealed 16 threatened flora have potential to occur within a ~5km radius of the Subject Land (**Table 5**).

Table 5. Threatened flora with potential to occur within the Subject Land.

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
<i>Acacia bynoeana</i>	Bynoe's Wattle	E	V	5
<i>Ancistrachne maidenii</i>	-	V	-	30
<i>Asterolasia elegans</i>	-	E	E	72
<i>Darwinia fascicularis subsp. oligantha</i>	<i>Darwinia fascicularis subsp. oligantha</i> population in the Baulkham Hills and Hornsby Local Government Areas	E	-	2
<i>Grammitis stenophylla</i>	Narrow-leaf Finger Fern	E	-	2
<i>Grevillea parviflora subsp. supplicans</i>	-	E	-	1
<i>Hibbertia spanantha</i>	Julian's Hibbertia	E	CE	1
<i>Lasiopetalum joyceae</i>	-	V	V	3
<i>Melaleuca deanei</i>	Deane's Paperbark	V	V	3
<i>Micromyrtus blakelyi</i>	-	V	V	3
<i>Olearia cordata</i>	-	V	V	15
<i>Pimelea curviflora var. curviflora</i>	-	V	V	6
<i>Pomaderris brunnea</i>	Brown Pomaderris	E	V	2
<i>Syzygium paniculatum</i>	Magenta Lilly Pilly	E	V	1
<i>Tetratheca glandulosa</i>	-	V	-	20
<i>Zieria involucrata</i>	-	E	V	22

V – Vulnerable; E – Endangered; EP – Endangered Population; CE – Critically Endangered

No threatened flora species were identified within the Subject Land however, this does not rule out the potential for threatened species to still exist within the Subject Land, particularly threatened orchids, grasses and herbs. Within 500m of the Subject Land, no threatened flora species are known to occur (**Figure 4**).

Based on habitat constraints, no threatened flora species were considered likely to occur within the Subject Land, particularly given the existing disturbed state. In the event that any of these species existed on the Subject Land, it is not expected that the activity would pose a significant impact to a viable local population, on the basis that all species are well represented in the locality and mitigation measures proposed in this report are adhered to (**Section 7.2**).

5.2 Threatened Fauna

Database searches revealed 38 threatened fauna occur, or have potential to occur, within a ~5km radius of the Subject Land (**Table 6**).

Table 6. Threatened fauna with potential to occur within the Subject Land.

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
<i>Heleioporus australiacus</i>	Giant Burrowing Frog	V	V	1
<i>Pseudophryne australis</i>	Red-crowned Toadlet	V	-	11
<i>Anthochaera phrygia</i>	Regent Honeyeater	E	CE	1
<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	V	-	2
<i>Burhinus grallarius</i>	Bush Stone-curlew	E	-	1
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	V	E	15
<i>Calyptorhynchus lathami lathami</i>	South-eastern Glossy Black-Cockatoo	V	V	40
<i>Chthonicola sagittata</i>	Speckled Warbler	V	-	1
<i>Daphoenositta chrysoptera</i>	Varied Sittella	V	-	9
<i>Glossopsitta pusilla</i>	Little Lorikeet	V	-	3
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	V	-	11
<i>Hieraaetus morphnoides</i>	Little Eagle	V	-	4
<i>Hirundapus caudacutus</i>	White-throated Needletail	-	V	4
<i>Ixobrychus flavicollis</i>	Black Bittern	V	-	5
<i>Lathamus discolor</i>	Swift Parrot	E	CE	2
<i>Ninox strenua</i>	Powerful Owl	V	-	9
<i>Pandion cristatus</i>	Eastern Osprey	V	-	3
<i>Petroica boodang</i>	Scarlet Robin	V	-	1
<i>Petroica phoenicea</i>	Flame Robin	V	-	1

Scientific Name	Common Name	BC Act	EPBC Act	Records within 5km
<i>Pterodroma leucoptera leucoptera</i>	Gould's Petrel	V	E	1
<i>Tyto novaehollandiae</i>	Masked Owl	V	-	3
<i>Tyto tenebricosa</i>	Sooty Owl	V	-	3
<i>Pommerhelix duralensis</i>	Dural Land Snail	E	E	3
<i>Cercartetus nanus</i>	Eastern Pygmy-possum	V	-	11
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	V	V	4
<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	V	E	5
<i>Micronomus norfolkensis</i>	Eastern Coastal Free-tailed Bat	V	-	2
<i>Miniopterus orianae oceanensis</i>	Large Bent-winged Bat	V	-	1
<i>Myotis macropus</i>	Southern Myotis	V	-	2
<i>Petauroides volans</i>	Southern Greater Glider	E	E	2
<i>Petaurus australis</i>	Yellow-bellied Glider	V	V	7
<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	V	-	3
<i>Phascolarctos cinereus</i>	Koala	E	E	9
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	V	3
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	V	-	1
<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	V	-	1
<i>Hoplocephalus bungaroides</i>	Broad-headed Snake	E	V	1
<i>Varanus rosenbergi</i>	Rosenberg's Goanna	V	-	6

V – Vulnerable; E – Endangered; EP – Endangered Population; CE – Critically Endangered

No threatened fauna species were identified within the Subject Land however, this does not rule out the potential for threatened species to still exist within the Subject Land, particularly given no targeted surveys were undertaken. Five (5) threatened fauna have the potential to occur within the Subject Land, based on habitat constraints and/ or historical records, that could be impacted by the activity. These species are:

- Amphibians:
 - *Pseudophryne australis* (Red-crowned Toadlet).
- Non-volant mammals:
 - *Cercartetus nanus* (Eastern Pygmy-possum).

- Volant mammals:
 - *Chalinolobus dwyeri* (Large-eared Pied Bat).
 - *Myotis macropus* (Southern Myotis).
- Reptiles:
 - *Varanus rosenbergi* (Rosenberg's Goanna).

Given the targeted nature of the activity (i.e. removal of disturbed ground stratum and structurally compromised damaged canopy) and large areas of potential habitat connected to the Subject Land, it was determined that the proposed activity is not likely to significantly impact upon any threatened fauna. Further assessment is provided in **Appendix A** and **Appendix B** of this report. Details of the threatened fauna habitat recorded within the Subject Land are included in **Table 7**.

Table 7. Fauna habitat values identified within the Subject Land.

Habitat component	Subject Land
Coarse woody debris	Present throughout.
Rock outcrops and bush rock	Present throughout – Bush rock.
Caves, crevices and overhangs	Absent.
Culverts, bridges, mine shafts, or abandoned structures	Absent.
Nectar/lerp-bearing Trees	Present throughout – <i>Eucalyptus</i> spp.
Nectar-bearing shrubs	Present throughout – <i>Acacia</i> spp.
Koala Use Trees	Present throughout – <i>Eucalyptus</i> spp.
Large stick nests	Absent.
Sap and gum sources	Present throughout – <i>Eucalyptus</i> spp.
She-oak fruit	Present throughout.
Seed-bearing trees and shrubs	Present throughout – <i>Eucalyptus</i> spp., <i>Acacia</i> spp.
Soft-fruit-bearing trees/shrubs	Present throughout – <i>Syzygium</i> spp.
Dense shrubbery and leaf litter	Present.
Tree hollows	Absent.
Decorticating bark	Present.
Wetlands, soaks, and streams	Absent.
Open water bodies	Absent.
Estuarine, beach, mudflats, and rocky foreshores	Absent.

5.3 Migratory Species

Database searches revealed seven migratory terrestrial species, or their habitat, are known to occur within the Subject Land (**Table 8**). These species do not breed in Australia.

Table 8. Migratory terrestrial species with potential to occur in the Subject Land.

Species	EPBC Act Status
<i>Cuculus optatus</i> (Oriental Cuckoo)	Migratory, CAMBA, JAMBA, ROKAMBA
<i>Hirundapus caudacutus</i> (White-throated Needletail)	Vulnerable, Migratory, CAMBA, JAMBA, ROKAMBA
<i>Monarcha melanopsis</i> (Black-faced Monarch)	Migratory, Bonn
<i>Monarcha trivirgatus</i> (Spectacled Monarch)	Migratory, Bonn
<i>Motacilla flava</i> (Yellow Wagtail)	Migratory, CAMBA, JAMBA, ROKAMBA
<i>Myiagra cyanoleuca</i> (Satin Flycatcher)	Migratory, Bonn
<i>Rhipidura rufifrons</i> (Rufous Fantail)	Migratory, Bonn

CAMBA = China-Australia Migratory Bird Agreement, JAMBA = Japan-Australia Migratory Bird Agreement, ROKAMBA = Republic of Korea-Australia Migratory Bird Agreement and Bonn = Convention on the Conservation of Migratory Species of Wild Animals.

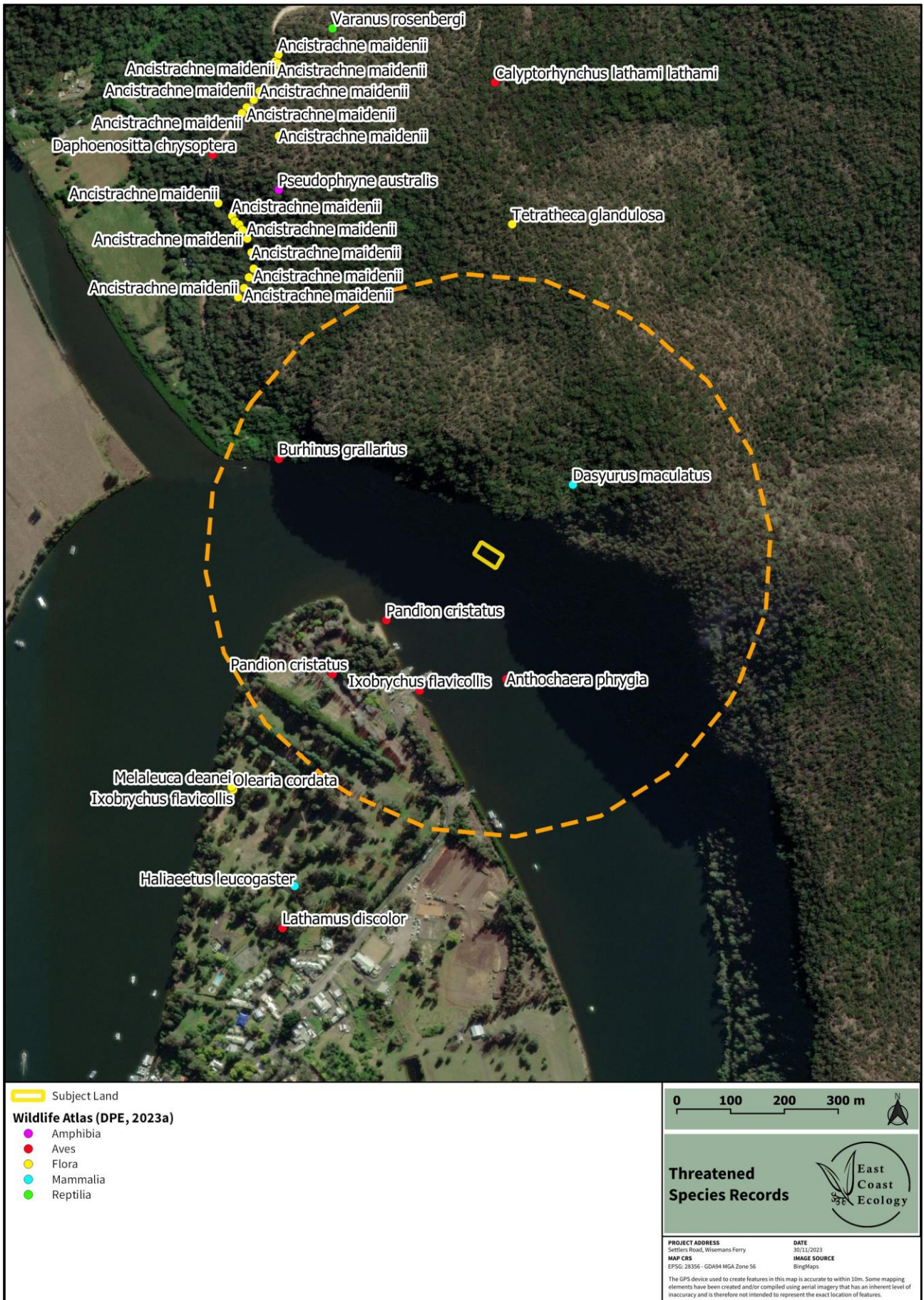


Figure 4. Threatened species records within proximity to the Subject Land.

6. IMPACT SUMMARY

6.1 Impacts to Plant Community Types

The primary direct ecological impact of the activity is clearing of native vegetation. The proposed activity will result in the removal of 0.13ha of PCT3238: Hunter Range Colluvial Apple-Gum Forest. Vegetation within the Subject Land is generally in poor condition due to the landslip, with small areas devegetated areas where the landslip was most prominent. Early signs of revegetation appeared to be dominated by common environmental weeds.

6.2 Impacts to Protected Fauna

All vegetation proposed for removal provides minor foraging habitat for a suite of protected fauna species. Sensitive and/ or specialist fauna habitats that may be directly impacted by the activity include:

- Rocky habitats (boulders), and
- Leaf litter and woody debris.

Within the context of the surrounding landscape, these habitat types are unlikely to offer suitable habitat for threatened fauna owing to the proximity of the ongoing operational impacts created by traffic on Settlers Road, as well as the recent landslip. Furthermore, the extensive, superior habitat offered within the adjoining National Park means that threatened fauna are unlikely to occupy the Subject Land in preference of surrounding habitats.

6.3 Impacts to Threatened Species and Communities

No threatened ecological communities were identified within the Subject Land, nor will any nearby be impacted by the proposed activity.

No threatened species were identified during the site assessment. The proposed activity has the potential to impact habitat for several species that have the potential to occur within the Subject Land, based on habitat constraints and could not be surveyed owing to the timing of the site assessment falling outside of the DPE endorsed survey periods. The result of a Test of Significance (5-Part Test) under the BC Act was that the proposed activity will not result in a 'significant impact' on any threatened entities and therefore the Biodiversity Offset Scheme is not triggered (**Appendix A**). As such, an SIS or a BDAR is not required. The result of an Assessment of Significance under the EPBC Act was that the proposed activity will not result in a 'significant impact' on any MNES (**Appendix B**) and a referral to the Australian Government Minister for the Environment is not required.

6.4 Operational Impacts

6.4.1 Wildlife Connectivity and Habitat Fragmentation

The Subject Land consists of an existing road corridor that has already fragmented the landscape.

It is possible that noise-related disturbance during construction may create a behavioural barrier to species which will temporarily create unsuitable conditions for crossing the road in proximity to the Subject Land. However, it is expected that construction will be finished by the end of Q1 2024 and existing areas suitable for crossing Settlers Road will remain unimpacted outside the Subject Land therefore, any behavioural impact is likely to be minor.

6.4.2 Fauna Injury and Mortality

The risk of injury and mortality is likely to be unchanged for Settlers Road following the completion of works. Injury and mortality of fauna could occur during construction activities. Specific impacts are likely to come as a result from:

- Vegetation and habitat removal
- Machinery and plant operation, and
- Construction traffic.

Targeted measures to mitigate these impacts are discussed in **Section 7.2**.

7. AVOIDANCE, MINIMISATION & MITIGATION

7.1 Avoidance and Minimisation

When assessing the biodiversity impacts of a proposed activity there are three key considerations. These three approaches are listed in a descending order of best biodiversity outcomes:

- **Avoid:** measures taken by a proponent such as careful site selection, or actions taken through the design, planning, construction and operational phases of the development to completely prevent impacts on biodiversity values, or certain areas of biodiversity
- **Minimise:** a process applied throughout the development planning and design life cycle that seeks to reduce the residual impacts of development on biodiversity values
- **Compensate:** measures in a proposed activity to compensate for the biodiversity values lost. This can be achieved through offsets (financial or not).

Given the nature of the proposed activity (i.e. slope remediation), opportunities to change the project design in favour of vegetation retention are fairly limited and defined by engineering requirements. Laydown and storage areas will be positioned outside of native vegetation to avoid any additional impacts to native vegetation beyond the unavoidable impacts associated with the proposed activity.

7.2 Impact Mitigation and Minimisation Recommendations

This section of the report details recommended efforts to avoid and minimise impacts on biodiversity values associated with the proposed activity. Measures to be implemented before, during, and post construction are detailed in **Table 9**.

Table 9. Measures to be implemented before, during, and after construction to avoid and minimise the impacts of the proposed activity.

Action	Outcome	Timing	Responsibility
Tree Protections	<p>Australian Standard 4970 (2009) Protection of Trees on Development Sites (AS 4970:2009) outlines that a Tree Protection Zone (TPZ) is the principal means of protecting trees on construction sites. It is an area isolated from construction disturbance so that the tree remains viable. Ideally, works should be avoided within the TPZ. A Minor Encroachment is less than 10% of the TPZ and is outside the structural root zone (SRZ). A Minor Encroachment is considered acceptable by AS 4970:2009 when it is compensated for elsewhere and contiguous within the TPZ. A Major Encroachment is greater than 10% of the TPZ or inside the SRZ. Major Encroachments generally require root investigations undertaken by non-destructive methods or the use of tree sensitive construction methods. Temporary tree protection fencing should be installed prior to the commencement of works.</p>	Prior to Construction	Council Arborist
Assigning a Project Ecologist for Vegetation Clearing	<p>Prior to works, the applicant should commission the services of a qualified and experienced Ecological Consultant (minimum 3 years' experience) with a minimum tertiary degree in Science, Conservation, Biology, Ecology, Natural Resource Management, Environmental Science or Environmental Management. The Ecologist must be licensed with a current Department of Primary Industries Animal Research Authority permit and New South Wales Scientific License issued under the BC Act. The Ecologist will be commissioned to:</p> <ul style="list-style-type: none"> • Undertake targeted searches for threatened flora prior to vegetation clearing, where possible • The unexpected species find procedure is to be followed under Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) if threatened ecological communities, not assessed in the biodiversity assessment, are identified in the Subject Land • 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, 2011) 	Prior to Construction	Council Ecologist

Action	Outcome	Timing	Responsibility
	<ul style="list-style-type: none"> 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, 2011) Fauna will be managed in accordance with Guide 9: Fauna handling of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011), and 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, 2011). <p>The unexpected species find procedure is to be followed under Guide 1: Pre-clearing process of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) if threatened flora and fauna, not assessed in the biodiversity assessment, are identified in the Subject Land.</p>		
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, 2011).	During Construction	Council Construction Contractor
Erosion and Sedimentation	<p>Appropriate erosion and sediment control should be erected and maintained at all times during construction in order to avoid the potential of incurring indirect impacts on biodiversity values:</p> <ul style="list-style-type: none"> Erosion and sediment controls would be established in accordance with an erosion and sedimentation plan to be produced for the proposed works <p>As a minimum, such measures should comply with the relevant industry guidelines such as ‘the Blue Book’ (Landcom, 2004).</p>	During Construction	Council Construction Contractors
Clearing of Vegetation	All habitat trees should be felled using a ‘slow drop’ technique. This involves knocking the trees to encourage any in situ fauna to vacate (e.g. using an excavator bucket) before slowly pushing the trees to the ground. Logs and log piles should be relocated outside of impact areas to minimise any loss of habitat.	During Construction	Council Clearing Contractors

Action	Outcome	Timing	Responsibility
Storage and Stockpiling (Soil and Materials)	Allocate all storage, stockpile, and laydown sites away from any vegetation that is planned to be retained. Avoid importing any soil from outside the site in order to avoid the potential of incurring indirect impacts on biodiversity values as this can introduce weeds and pathogens to the site. If materials are required to be imported for landscaping works, they are to be sterilised according to industry standards prior to importation to site.	During Construction	Construction Contractors
No Weeds imported on to the Subject Land	No priority or environmental weeds are to be imported on to the site prior to or during construction works.	During Construction	Council Construction Contractors
Out of hours works (6pm – 6am)	Control measures (e.g. the directional lighting and task lighting) are to be installed to minimise glare and light spillage into adjoining vegetation to minimise potential impacts to fauna species.	During Construction	Council Construction Contractors

8. CONCLUSION

The proposed activity will impact approximately 0.13ha of native vegetation (PCT3238: Hunter Range Colluvial Apple-Gum Forest). No threatened flora or fauna species were identified within the Subject Land however, this does not rule out the potential for threatened species to still exist within the Subject Land, particularly cryptic species. Five (5) threatened fauna have the potential to occur within the Subject Land, based on habitat constraints and/ or historical records, that could be impacted by the proposed activity. These species were:

- Amphibians:
 - *Pseudophryne australis* (Red-crowned Toadlet).
- Non-volant mammals:
 - *Cercartetus nanus* (Eastern Pygmy-possum).
- Volant mammals:
 - *Chalinolobus dwyeri* (Large-eared Pied Bat).
 - *Myotis macropus* (Southern Myotis).
- Reptiles:
 - *Varanus rosenbergi* (Rosenberg's Goanna).

This assessment demonstrates that the relevant provisions of the *Environmental Planning and Assessment Act 1979*, *Biodiversity Conservation Act 2016* and the *Environment Protection and Biodiversity Conservation Act 1999* have been satisfied. If the appropriate recommendations in this report are followed, the proposed activity will have a non-significant impact to protected biodiversity and is unlikely to significantly impact any threatened ecological community or species.

9. REFERENCES

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10. APPENDICES

Appendix A. 5-Part Tests (Tests of Significance).

Appendix B. Assessment of Significance (EPBC Act).

Appendix A. 5-Part Tests (Tests of Significance).

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
For Threatened Amphibians**

Pseudophryne australis

<p>(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,</p>	<p>The proposed action is not likely to have an adverse effect on the life cycle of this species such that a viable local population of the species is likely to be placed at risk of extinction.</p> <p>Much of the direct impacts from the activity that are relevant for these species will occur when stabilising bush rock. Although not ideal habitat given proximity to Settlers Road, potential direct impacts will occur on all slopes where sheltering habitat in leaf litter or under bush rock occurs. Given the absence of a dense vegetation and an ephemeral water source within the Subject Land, it is unlikely that any part of the Subject Land would be used for breeding by these species.</p> <p>It is not expected that a viable local population would be likely to be placed at risk of extinction given suitable habitat remaining immediately adjacent to the Subject Land and the very large areas of potential habitat in the broader locality. In addition, targeted surveys prior to construction, and translocation, will further reduce the potential direct impact to this species.</p> <p>It is possible that this species will suffer from indirect impacts associated with downstream sedimentation, although these impacts can be controlled through standard mitigation measures and are not likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.</p>	
<p>(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:</p>	<p>(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or</p>	<p>Not Applicable.</p>

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
For Threatened Amphibians**

Pseudophryne australis

	<p>(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,</p>	<p>Not Applicable.</p>
<p>(c) in relation to the habitat of a threatened species or ecological community:</p>	<p>(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and</p>	<p>Approximately 0.13ha of potential habitat for this species will be impacted as a result of the activity. Areas potentially containing these species, that immediately adjoin the Subject Land, will be retained.</p>
	<p>(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and</p>	<p>No increased fragmentation will occur as a result of the activity. Following construction connectivity through vegetation corridors will remain both north and south of Settlers Road and will be provided by surrounding large areas of potential habitat occurring in the broader locality.</p>
	<p>(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,</p>	<p>The habitat to be directly impacted (non-breeding), is unlikely to be of high importance to this species given its current or historical use (road corridor). Higher-quality habitat will continue to persist in the broader locality.</p>
<p>(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity</p>	<p>The activity proposed is not likely to have an adverse effect on any declared area of critical habitat, directly or indirectly.</p>	

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
For Threatened Amphibians**

Pseudophryne australis

value (either directly or indirectly),

(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

The following Key Threatening Processes (KTPs) are documented to impact upon the survival of the ecological community:

- Clearing of native vegetation
- Removal of bush rock

Suitable habitat will remain adjacent to the Subject Land and in the broader locality.

Conclusion

There will be no significant impact on these species therefore the proposed action should not warrant the preparation of a Species Impact Statement (SIS) or Biodiversity Development Assessment Report (BDAR).

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
For Threatened Arboreal Mammals**

Cercartetus nanus

<p>(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,</p>	<p>The proposed action is not likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.</p> <p>The majority of potentially suitable habitat to be directly impacted will be the removal of 0.13ha of trees and shrubs. This species may use these trees as movement corridors across the existing road corridor, however, suitable habitat will remain immediately adjacent to the Subject Land and the very large areas of potential habitat in the broader locality.</p> <p>It is unlikely that this species will suffer from indirect impacts associated with fragmentation of habitat as the proposed works occur along an existing road corridor already forms a barrier to their movement. It is not likely that indirect impacts to the movement of these species will have the potential to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.</p>	
<p>(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:</p>	<p>(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or</p>	<p>Not Applicable.</p>
<p>(c) in relation to the habitat of a threatened species or ecological community:</p>	<p>(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and</p>	<p>Approximately 0.13ha of potential foraging and/ or breeding habitat for these species has the potential to be impacted as a result of the activity. Areas potentially containing habitat for this species, that immediately adjoin the Subject Land, will be retained.</p>

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
For Threatened Arboreal Mammals**

Cercartetus nanus

	<p>(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and</p>	<p>An increase in fragmentation is not expected.</p>
	<p>(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,</p>	<p>The habitat to be impacted is not likely to be of high importance to these species given it is already highly fragmented by the existing road corridor and subjected to a landslip.</p>
<p>(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),</p>	<p>The activity proposed is not likely to have an adverse effect on any declared area of critical habitat, directly or indirectly.</p>	
<p>(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.</p>	<p>The following Key Threatening Processes (KTPs) are documented to impact upon the survival of the ecological community:</p> <ul style="list-style-type: none"> • Clearing of native vegetation. <p>Suitable habitat will remain adjacent to the Subject Land and in the broader locality.</p>	

Conclusion

There will be no significant impact on these species therefore the proposed action should not warrant the preparation of a Species Impact Statement (SIS) or Biodiversity Development Assessment Report (BDAR).

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
For Threatened Insectivorous Bats**

Chalinolobus dwyeri, Myotis macropus

<p>(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,</p>	<p>The proposed action is not likely to have an adverse effect on the life cycle of these species such that a viable local population of the species is likely to be placed at risk of extinction.</p> <p>Much of the direct impacts from the activity occur on the edge of an existing road, which is unlikely to provide suitable habitat for these species, especially in the context of the surrounding National Park. No suitable important habitats (cave habitat) will be directly impacted. It is possible that these species will suffer from indirect impacts associated with construction related impacts such as noise and vibration, which may deem some roosting habitats temporarily unsuitable. Nevertheless, areas of suitable of habitat will remain adjacent to the Subject Land that will facilitate movement of this species between patches of more suitable habitat in the broader locality. These indirect impacts are not likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.</p>	
<p>(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:</p>	<p>(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or</p>	<p>Not Applicable.</p>
<p>(c) in relation to the habitat of a threatened species or ecological community:</p>	<p>(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and</p>	<p>Approximately 0.13ha of potential foraging habitat for these species has the potential to be impacted as a result of the activity. Habitat in nearby cliffs and overhangs may experience temporary impacts during</p>

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
For Threatened Insectivorous Bats**

Chalinolobus dwyeri, Myotis macropus

		construction. Areas potentially containing these species, that immediately adjoin the Subject Land, will be retained.
	(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and	It is not expected that an increase in fragmentation will occur for these species.
	(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,	The habitat to be impacted is not expected to be of high importance to this species given the mobility of the species. Higher-quality habitat will continue to persist in the broader locality.
(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),		The activity proposed is not likely to have an adverse effect on any declared area of critical habitat, directly or indirectly.
(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.		The following Key Threatening Processes (KTPs) are documented to impact upon the survival of the ecological community: <ul style="list-style-type: none"> • Clearing of native vegetation. • Removal of dead wood and dead trees. Suitable habitat will remain adjacent to the Subject Land and in the broader locality.

Conclusion

There will be no significant impact on this species therefore the proposed action should not warrant the preparation of a Species Impact Statement (SIS) or Biodiversity Development Assessment Report (BDAR).

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
For Threatened Reptiles**

Varanus rosenbergi

<p>(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,</p>	<p>The proposed action is not likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.</p> <p>Much of the potential direct impacts will occur when disturbing bush rock or woody debris during construction. Should these species occur it is not expected that a viable local population would be likely to be placed at risk of extinction given suitable habitat remaining immediately adjacent to the Subject Land and the very large areas of potential habitat in the broader locality.</p> <p>It is unlikely that these species will suffer from indirect impacts associated with fragmentation of foraging habitat as the proposed works occur along an existing road corridor that may already form a barrier to their movement. Nevertheless, patches of habitat will remain adjacent to the Subject Land that will facilitate movement of this species between patches of more suitable habitat in the broader locality. These indirect impacts are not likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.</p>	
<p>(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:</p>	<p>(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or</p>	<p>Not Applicable.</p>
	<p>(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,</p>	<p>Not Applicable.</p>
<p>(c) in relation to the habitat of a threatened species or ecological community:</p>	<p>(i) the extent to which habitat is likely to be removed or modified as a result of the</p>	<p>Approximately 0.13ha of potential foraging habitat for these species will be impacted as a result of the activity. Habitat in</p>

**Biodiversity Conservation Act 2016 – Test of Significance (5-part Test)
For Threatened Reptiles**

Varanus rosenbergi

	proposed development or activity, and	the form of bush rock and coarse woody debris may experience impacts during construction, however will be relocated. Areas potentially containing these species, that immediately adjoin the Subject Land, will be retained.
	(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and	It is not expected that an increase in fragmentation will occur for these species.
	(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,	The habitat to be impacted is not expected to be of high importance to this species given the mobility of the species. Higher-quality habitat will continue to persist in the broader locality.
(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),	The activity proposed is not likely to have an adverse effect on any declared area of critical habitat, directly or indirectly.	
(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.	The following Key Threatening Processes (KTPs) are documented to impact upon the survival of the ecological community: <ul style="list-style-type: none"> • Clearing of native vegetation, and • Removal of bush rock. Suitable habitat will remain adjacent to the Subject Land and in the broader locality.	

Conclusion

There will be no significant impact on this species therefore the proposed action should not warrant the preparation of a Species Impact Statement (SIS) or Biodiversity Development Assessment Report (BDAR).

Appendix B. Assessment of Significance (EPBC Act).

<p><i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i> Assessment of Significant Impact Criteria for <i>Insectivorous Microbats</i></p>	
<p><i>Chalinolobus dwyeri</i></p>	
<p>Significant impact criteria An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:</p>	
<p>lead to a long-term decrease in the size of an important population of a species</p>	<p>The proposed action will not lead to a long-term decrease in the size of an important population of this species.</p> <p>Only foraging habitat will be impacted by the proposed action. Breeding habitat will not be impacted. While the activity will require the removal of approximately 0.13ha of potential habitat, no records of this species occur within the Subject Land and this species will continue to have large areas of habitat within the locality.</p>
<p>reduce the area of occupancy of an important population</p>	<p>The proposed action will not reduce the area of occupancy of an important population of this species. There are only records for this species outside of the Subject Land within the broader locality.</p>
<p>fragment an existing important population into two or more populations</p>	<p>The proposed action will not fragment any existing important population into two or more populations. The Subject Land occurs along an existing road that would already be considered to fragment habitat for this species. No additional clearing is to occur beyond the Subject Land.</p>
<p>adversely affect habitat critical to the survival of a species</p>	<p>The proposed action will not adversely affect habitat critical to the survival of this species. Potential habitat to be impacted is not considered critical to the survival of this species.</p>
<p>disrupt the breeding cycle of an important population</p>	<p>No breeding habitat will be impacted. Noise, vibration and light spill impacts have potential to indirectly impact nearby habitat, if not managed appropriately. No known Pied Bat roosts occur within proximity to the Subject Land.</p>

Commonwealth Environment Protection and Biodiversity Conservation Act 1999
Assessment of Significant Impact Criteria
for
Insectivorous Microbats

Chalinolobus dwyeri

modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposed action will lead to a decrease in the available habitat for this species however, it is not expected that this will lead to decline. Much of the habitat being disturbed will be available to this species following construction given this species forages aerially.
result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	Subject to weed control measures, the activity will not result in the introduction of an invasive species harmful to this species.
introduce disease that may cause the species to decline	Subject to pathogen control measures, the activity will not result in the introduction of a disease that may cause this species to decline.
interfere substantially with the recovery of the species	The proposed activity is not expected to interfere substantially with the recovery of this species. No individuals have been recorded within the Subject Land and much of the habitat being disturbed will be available to this species following construction.



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Appendix C Non-Aboriginal Heritage Searches



Aboriginal Places

Item Name	Address	Local Government Area	SHR ID	Heritage Item ID	Record Owner
No results in layer					

State Heritage Register

Item Name	Address	Local Government Area	SHR ID	Heritage Item ID	Record Owner
No results in layer					

Interim Heritage Order

Item Name	Address	Local Government Area	SHR ID	Heritage Item ID	Record Owner
No results in layer					

Local Environment Plan

Item Name	Address	Local Government Area	SHR ID	Heritage Item ID	Record Owner
No results in layer					

Heritage Search Result

Date: 18-Dec-2023

Appendix D Aboriginal Heritage Due Diligence Assessment



**SETTLERS ROAD LANDSLIDE REMEDIATION WORKS
WISEMANS FERRY, NSW**

Addendum to Aboriginal Heritage Due Diligence Assessment

Prepared for Hutchison Weller Pty Ltd

Hawkesbury and Central Coast Local Government Area

December 2023

Ref. 2303

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Document Information

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1 Introduction

1.1 Project background

Hutchison Weller Pty Ltd has prepared a Review of Environmental Factors (REF) to inform proposed remediation works along Settlers Road in Wisemans Ferry, NSW. Settlers Road at Wisemans Ferry has been impacted by landslides triggered by a significant rain event in February/March 2022. The preferred remedial solution comprised cutting back of the slope above the road and installation of a debris fence. This required the design of rock bolts, debris fence, earthworks and formalisation of the existing drainage. The proposal was situated on the border of the Central Coast Local Government Area (LGA) and the Hawkesbury LGA, with the project REF submitted to Hawkesbury City Council for determination.

Kelleher Nightingale Consulting Pty Ltd (KNC) was engaged by Hutchinson Weller Pty Ltd to undertake an Aboriginal heritage due diligence assessment to inform the REF (KNC 2023). No Aboriginal archaeological sites were identified within the due diligence assessment area.

Subsequent to the completion of the Aboriginal heritage due diligence assessment report and following detailed design of the preferred option (1C) for CH250 to CH450, it was highlighted that a previously overlooked landslide approximately 200 metres to south-east (towards Wisemans Ferry) also required detailed design in order to reopen Settlers Road to its pre-existing condition and with an acceptable risk level.

The additional area (hereafter referred to as the 'addendum study area') encompasses a 60-90 metre-long portion of the Settlers Road road reserve, approximately 285 metres north east of the Wisemans Ferry crossing at Wisemans Ferry, NSW (Figure 1). The proposed works include bulk removal of landslide debris with excavation back to an assumed buried cliffline. Minor variations from the CH240 to CH450 design include removal of the debris fence and a contingency for inclusion of a soil nail wall in the upper part of the excavation should a buried rock cliff not extend to the backscarp of the slide.

KNC have been engaged by Hutchinson Weller Pty Ltd, to undertake an addendum Aboriginal archaeological assessment for the addendum study area to inform the addendum REF.

1.2 Aim of assessment

This report assesses the potential impact of the proposed works within the addendum study area on Aboriginal archaeological heritage. This report is an addendum to the *Settlers Road Landslide Remediation Works, Wisemans Ferry, NSW: Aboriginal Heritage Due Diligence Assessment* (KNC 2023) and should be read in association with that document. Information from the assessment pertinent to the addendum study area is presented in the following sections.

1.3 Summary

No extant Aboriginal archaeological objects/sites or areas of archaeological potential were identified in the addendum study area.

The addendum study area has been disturbed by existing road construction, and natural erosional and colluvial processes across the steep lower slope landform. Aboriginal archaeological potential of the addendum study area was assessed as very low.

No Aboriginal archaeological objects will be impacted by the proposed works within the addendum study area.

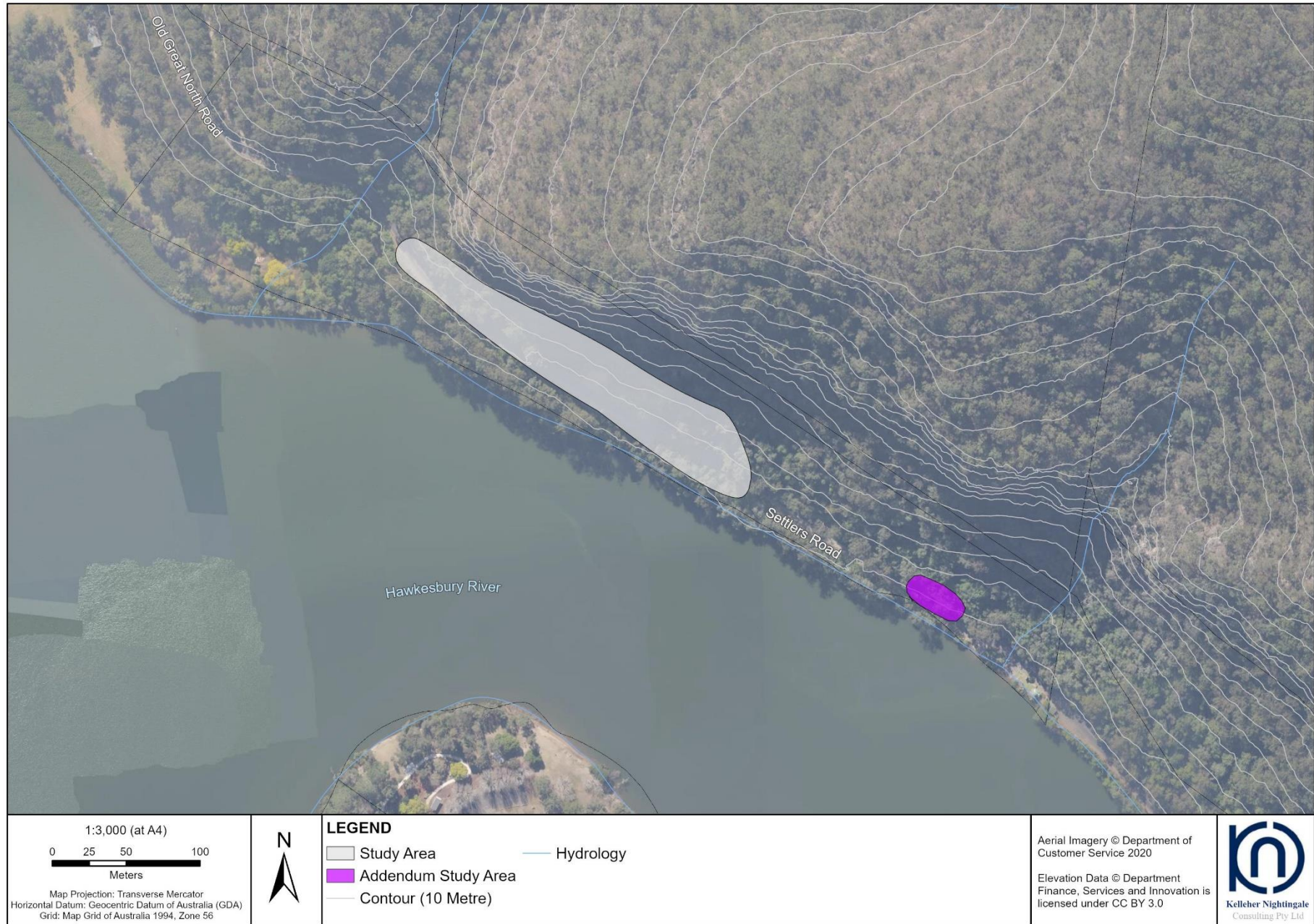


Figure 1. Addendum study area

2 Assessment

2.1 Database searches and known information sources

2.1.1. Aboriginal Heritage Information Management System

The Aboriginal Heritage Information Management System (AHIMS) is a database operated by Heritage NSW, regulated under section 90Q of the *National Parks and Wildlife Act 1974*. AHIMS contains information and records related to registered Aboriginal archaeological sites (Aboriginal objects, as defined under the Act) and declared Aboriginal places (as defined under the Act) in NSW.

A search of AHIMS was conducted on 23 August 2023 to identify registered (known) Aboriginal sites or declared Aboriginal places within or adjacent to the addendum study area (AHIMS Client Service ID: 812512). The search results are attached as Appendix A. The AHIMS Web Service database search was conducted within the following coordinates (GDA, Zone 56):

Eastings: 310530 – 314775
 Northings: 6303120 – 6307315
 Buffer: 0 metres (search area included an extensive buffer)

The AHIMS search results showed:

13	Aboriginal sites are recorded in or near the above location
0	Aboriginal places have been declared in or near the above location

The distribution of recorded Aboriginal sites within these coordinates is shown on Figure 2. The proportion of site types within the AHIMS database search area are listed in Table 1.

Table 1. Site features and site context from AHIMS database search

Site Context	Site Feature	Number	Frequency (%)
Closed	Art (Pigment or Engraved)	6	46.1
	Art (Pigment or Engraved); Artefact	1	7.7
	Artefact	1	7.7
Open	Art (Pigment or Engraved); Grinding Groove	2	15.4
	Grinding Groove	1	7.7
	Shell; Artefact	1	7.7
	Stone Arrangement; Water Hole	1	7.7
Total		13	100

2.1.2. Aboriginal heritage registers searches

A search was undertaken of the following statutory and non-statutory heritage registers for Aboriginal heritage items:

- State Heritage Register and State Heritage Inventory
- Penrith Local Environmental Plan 2010
- Section 170 Heritage and Conservation Registers
- National Heritage List
- Commonwealth Heritage List
- Australian Heritage Database (Register of the National Estate – Non-statutory archive) and
- Australian Heritage Places Inventory (Register of the National Estate – Non-statutory archive).

No Aboriginal heritage items were identified on these registers within the addendum study area.

2.1.3. Known Aboriginal heritage in the area

A comprehensive review of previous archaeological investigations within Settlers Road Landslide Remediation Works project area (including the addendum study area) was undertaken as part of the *Settlers Road Landslide Remediation Works, Wisemans Ferry, NSW: Aboriginal Heritage Due Diligence Assessment* (KNC 2023). No previously registered Aboriginal archaeological sites were identified within close proximity to the current addendum study area. The closest registered Aboriginal archaeological site was located 140 metres to the east of the addendum study area: Wisemans Ferry; (AHIMS 45-2-0026).

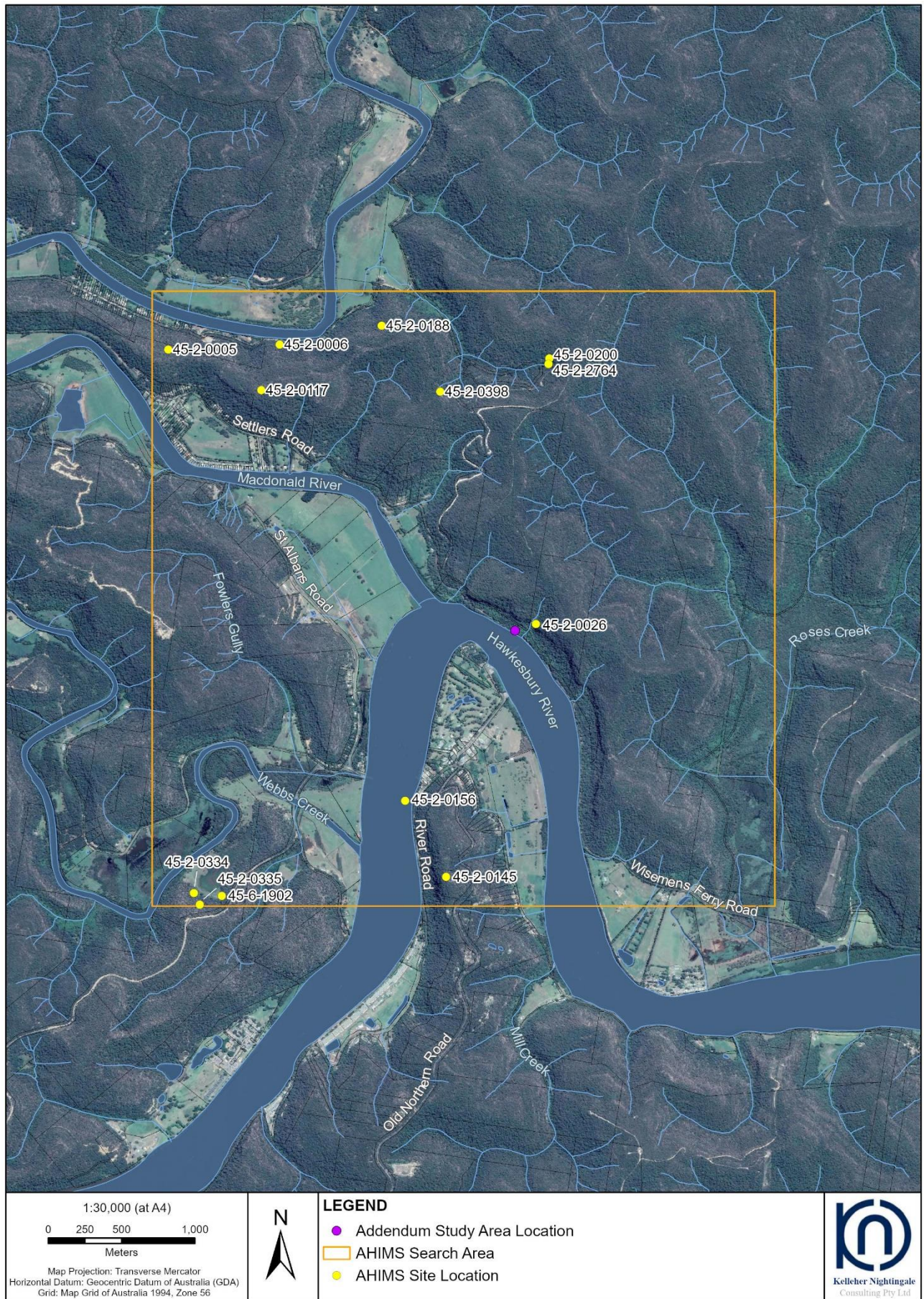


Figure 2. AHIMS search results

2.2 Landscape context

A comprehensive review of the landscape context within the Settlers Road Landslide Remediation Works project area and adjacent areas, including the addendum study area, was undertaken as part of the *Settlers Road Landslide Remediation Works, Wisemans Ferry, NSW: Aboriginal Heritage Due Diligence Assessment* (KNC 2023: Section 2.3). The information pertinent to the addendum study area is presented below.

The addendum study area is located immediately adjacent to the Hawkesbury River, in the south eastern corner of the Yengo subregion of the Sydney Basin, where the Macdonald Ranges meet the Hornsby Plateau. The bedrock unit of the addendum study area is Narrabeen Sandstone (Tna), comprising quartz-lithic to quartzose sandstone, conglomerate, mudstone, siltstone and rare coal. Atop this at higher elevations sits the younger Hawkesbury Sandstone (Tuth), comprising cross-bedded to massive quartz sandstone with mudstone lenses (Figure 3). The older, Narrabeen sandstone has been exposed at the base of the Hawkesbury Gorge and surrounding creek and river valleys via long-term fluvial erosion. Sandstone is conducive to the formation of overhang and cave weathered formations suitable for human habitation (rockshelter sites). Sandstone also outcrops as benches and slabs which can provide flat or gently sloping surfaces suitable for engraving sites and grinding grooves.

The addendum study area is within the Settlers Road road reserve on the north banks of the Hawkesbury River, transecting a colluvial slope above the riverbank. Above the road is steep bushland of Dharug National Park. Relief is very steep, with complex sandy colluvial soils developed on the unstable talus slopes.

Soils of the addendum study area belong to the colluvial Watagan Soil Landscape (McInnes 1997; Figure 3). Watagan soils occur on the rolling to very steep hills on Narrabeen Group sediments in the Macdonald Ranges and the Hawkesbury Valleys. Local relief is between 100 - 250 metres with slope gradients >25%. Elevation ranges from 10 - 300 metres. Landforms include narrow (<100 metre) convex crests and ridges, steep colluvial sideslopes, narrow and incised drainage lines with occasional sandstone boulders and benches.

Typical Watagan soil profiles in the context of the addendum study area include shallow to moderately deep well-drained siliceous sands and Lithosols (rudosols), sandstone colluvial deposits of imperfectly drained colluvial soils and occasional red and yellow podzolics on underlying shale lenses. Watagan soils are subject to rock falls, mass soil movement, shallow soils and severe erosion hazards. Where archaeological deposit exists outside of the rock shelters that dominate this landscape, little is likely to survive in situ. Whether the archaeological deposit within rock shelters displays stratigraphic and spatial integrity is generally determined by factors other than soils (e.g. proximity to creeks and potential flood scouring, roof falls/collapses preserving deposit etc.).

The majority of the study area has been previously disturbed by road construction, and ongoing natural processes including erosion and colluviation.

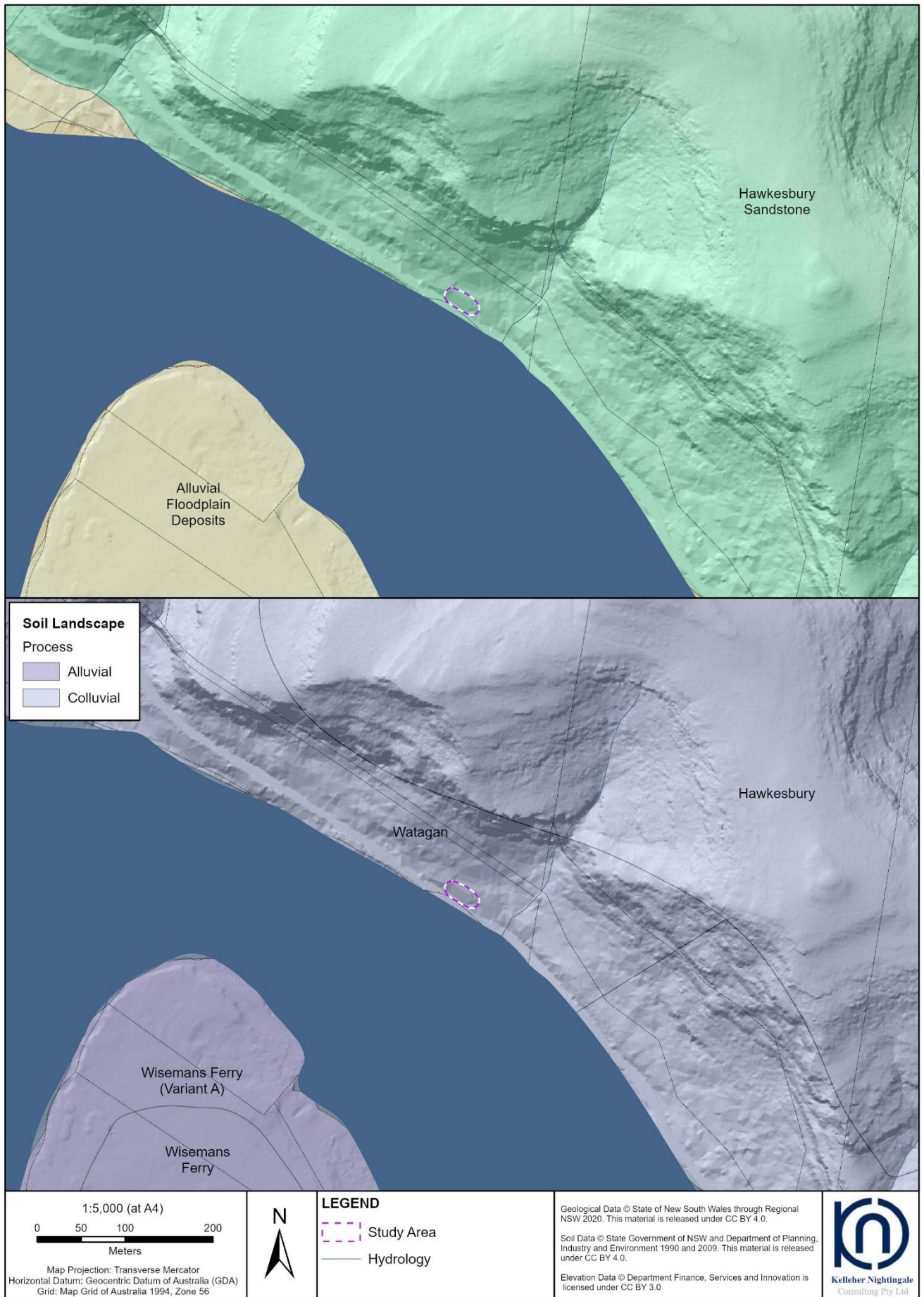


Figure 3. Geology and soil landscape of the addendum study area

2.3 Visual inspection

The addendum study area was inspected and assessed on 30 November 2023 by Mark Rawson (Senior Archaeologist, KNC).

The addendum study area was delineated by a line of concrete barriers or “jersey kerbs” along the northern edge of the road. This was approximately 30-80 metres west of the Wisemans ferry ramp on the northern bank of the Hawkesbury River. The slope of the road declines to the south-east. The slope was colluvium derived from local weathering of Hawkesbury Sandstone and underlying Narrabeen Group Buralow Formation rocks.

The slope of the addendum study area above the concrete barriers was steeply inclined and comprised recent mixed landslide material of large angular sandstone boulders up to two metres in size. Smaller angular sandstone fragments of variable size, moist consolidated sandy soil, abundant clay and shale fragments from weathering of Buralow Formation rocks, and fallen tree were also recorded. The looser material was up to approximately five metres above the roadway. Above this was more consolidated older colluvium which had become stabilised by native vegetation. Native trees included Lilly Pillies and other closed forest plants covered by creepers and vines, as well as scattered eucalypts such as Bloodwood and Grey Gum. Most trees were medium to young regrowth. Weeds and grasses covered the more disturbed lower slopes near the road.

There were no rock outcrops or cliff lines with potential to contain overhangs within or within proximity to the addendum study area. these were considered to occur at higher elevations on the slope. The addendum study area was entirely comprised of redeposited colluvial material. No Aboriginal objects, areas of archaeological potential or Aboriginal archaeological sites were identified within the addendum study area as a result of visual inspection. The addendum study area had been disturbed by existing road construction and the effects of colluviation.



Plate 1. View to south-east. Settlers Road. Addendum study area at left above barrier. At right distance is ferry ramp from Wisemans Ferry.



Plate 2. View to north. Settlers Road. Fresh landslide material in lower five metres, with more consolidated colluvium higher up, covered in native vegetation. Landslide material included large angular sandstone boulders, shale, clay and sandy soil.



Plate 3. View to north. Settlers Road. Lower landslide material near roadway, with vegetated consolidated colluvium on higher slopes.



Plate 4. View to north. Settlers Road. Vegetated colluvium on higher slopes above addendum study area. There were no cliff lines seen close to the addendum study area.

3 Impact Assessment

No Aboriginal archaeological objects/site or areas of archaeological potential were identified within the addendum study area. No Aboriginal archaeological sites or areas of archaeological potential will be impacted by the proposed works within the addendum study area.

3.1 Consistency determination

The findings of this addendum Aboriginal archaeological assessment are consistent with the archaeological findings of the existing *Settlers Road Landslide Remediation Works, Wisemans Ferry, NSW: Aboriginal Heritage Due Diligence Assessment* prepared by KNC (KNC 2023).

No Aboriginal archaeological objects/sites will be impacted by the proposed works within the addendum study area and the proposal may proceed with caution.

4 Conclusions and Recommendations

No Aboriginal archaeological objects/sites or areas of archaeological potential were identified in the addendum study area.

Visual inspection confirmed that the addendum study area has been disturbed by land use practices, natural erosional and colluvial processes and construction of the existing road alignment.

No Aboriginal archaeological objects/sites will be impacted by the proposed works within the addendum study area.

This addendum should be appended to the existing *Settlers Road Landslide Remediation Works, Wisemans Ferry, NSW: Aboriginal Heritage Due Diligence Assessment* (KNC 2023). All subsequent management of the addendum study area should be consistent with the agreed Aboriginal heritage management strategy contained in this report.

References

- Heritage NSW, 2010a. *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*. Office of Environment and Heritage, Department of Premier and Cabinet, Sydney.
- McInnes S.K., 1997, *Soil Landscapes of the St Albans 1:100,000 Sheet map and report*, NSW Department of Land and Water Conservation, Sydney.
- National Parks and Wildlife Service (NPWS), 2003. *The Bioregions of New South Wales: Their Biodiversity, Conservation and History*. National Parks and Wildlife Service NSW, Hurstville NSW.
- Pickett, J. and Alder, J., 1997. *Layers of Time: the Blue Mountains and their Geology*. Department of Mineral Resources: Sydney.
- Troedson A.L. 2016. *Central Coast Area 1:100 000 and 1:25 000, Coastal Quaternary Geology Map Series*. Geological Survey of New South Wales, Maitland

Appendix A



AHIMS Web Services (AWS) Extensive search - Site list report

Your Ref/PO Number : 2303

Client Service ID : 812512

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-2-0398	Yengo NP;	AGD	56	312390	6306440	Open site	Valid	Grinding Groove :-	Axe Grinding Groove	1333
	Contact	Recorders	Warren Bluff					Permits		
45-2-0200	OLD NORTH ROAD SHEPHERDS GULLY SWA	GDA	56	313238	6306857	Closed site	Valid	Art (Pigment or Engraved) :-	Shelter with Art	
	Contact	Recorders	Warren Bluff,Ms.Collette Douchkov					Permits		
45-2-2764	SHEPHERDS GULLY ROADBEND SWA	GDA	56	313232	6306818	Closed site	Valid	Art (Pigment or Engraved) :-		
	Contact	Recorders	Mr.Jeff Betteridge,DPIE - Armidale					Permits		
45-2-0334	Webbs creek;	AGD	56	310710	6303020	Closed site	Valid	Art (Pigment or Engraved) :-	Shelter with Art	1333
	Contact	Recorders	Warren Bluff					Permits		
45-2-0335	Webbs creek;	AGD	56	310750	6302940	Closed site	Valid	Art (Pigment or Engraved) :-	Shelter with Art	1333
	Contact	Recorders	Warren Bluff					Permits		
45-2-0117	Wisemans Ferry;Lwr Macdonald R.;	AGD	56	311170	6306450	Open site	Valid	Stone Arrangement :- , Water Hole :-	Stone Arrangement,Water Hole/Well	
	Contact	Recorders	Ms.Tossa Corkill					Permits		
45-2-0145	Longreach Lookout; Wisemans Ferry	AGD	56	312430	6303130	Open site	Valid	Grinding Groove :- , Art (Pigment or Engraved) :-	Axe Grinding Groove,Rock Engraving	
	Contact	Recorders	Warren Bluff,Mr.S McCarthy,Tegan Burton					Permits		
45-2-0026	Wisemans Ferry;	AGD	56	313042	6304855	Closed site	Valid	Art (Pigment or Engraved) :-	Shelter with Art	
	Contact	Recorders	Fred McCarthy					Permits		
45-2-0156	Longreach Lookout;	AGD	56	312150	6303649	Open site	Valid	Grinding Groove :- , Art (Pigment or Engraved) :-	Axe Grinding Groove,Rock Engraving	
	Contact	Recorders	Warren Bluff					Permits		
45-2-0188	Ruins;	AGD	56	311990	6306890	Closed site	Valid	Art (Pigment or Engraved) :-	Shelter with Art	
	Contact	Recorders	Warren Bluff					Permits		
45-6-1902	Long Nose Point 2.;	AGD	56	310900	6303000	Open site	Valid	Shell :- , Artefact :-	Midden	
	Contact	Recorders	Michael Guider					Permits		
45-2-0006	WISEMAN'S FERRY ROADCLIFF SWA	GDA	56	311400	6306951	Closed site	Valid	Artefact :- , Art (Pigment or Engraved) :-	Shelter with Art,Shelter with Deposit	
	Contact	Recorders	Moore,Jenny Hanrahan,Ms.Collette Douchkov					Permits		
45-2-0005	MacDonald R. MR/1;Wisemans Ferry;	AGD	56	310536	6306727	Closed site	Valid	Artefact :-	Shelter with Deposit	588
	Contact	Recorders	Moore					Permits		

Report generated by AHIMS Web Service on 23/08/2023 for Matthew Kelleher for the following area at Datum :GDA, Zone : 56, Eastings : 310530.0 - 314775.0, Northings : 6303120.0 - 6307315.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 13

This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

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AHIMS Web Services (AWS) Extensive search - Site list report

Your Ref/PO Number : 2303
Client Service ID : 812512

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
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**** Site Status**
Valid - The site has been recorded and accepted onto the system as valid
Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.
Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground
Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 23/08/2023 for Matthew Kelleher for the following area at Datum :GDA, Zone : 56, Eastings : 310530.0 - 314775.0, Northings : 6303120.0 - 6307315.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 13

This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Appendix E Regulated catchments considerations

Reference	Matter	Comment
6.6(1)(a)	whether the development will have a neutral or beneficial effect on the quality of water entering a waterway,	Negligible impact. Refer to Section 6.2 of this Addendum REF.
6.6(1)(b)	whether the development will have an adverse impact on water flow in a natural waterbody,	Negligible impact. Refer to Section 6.2 of this Addendum REF.
6.6(1)(c)	whether the development will increase the amount of stormwater run-off from a site,	Negligible impact. Refer to Section 6.2 of this Addendum REF.
6.6(1)(d)	whether the development will incorporate on-site stormwater retention, infiltration or reuse,	The proposed modification would generate a negligible amount of additional stormwater. Stormwater retention, infiltration or reuse measures are not required.
6.6(1)(e)	the impact of the development on the level and quality of the water table,	The proposed modification would not intercept groundwater. No changes to groundwater levels or quality are expected.
6.6(1)(f)	the cumulative environmental impact of the development on the regulated catchment	The proposed modification would have negligible impacts on the catchment and therefore the potential for cumulative impacts is limited.
6.6(1)(g)	whether the development makes adequate provision to protect the quality and quantity of ground water.	Safeguards relating to the protection of water quality are included in Section 7 of this Addendum REF.
6.6(2)(a)	the effect on the quality of water entering a natural waterbody will be as close as possible to neutral or beneficial, and	Negligible impact. Refer to Section 6.2 of this Addendum REF.
6.6(2)(b)	the impact on water flow in a natural waterbody will be minimised.	Negligible impact. Refer to Section 6.2 of this Addendum REF.
6.7(1)(a)	whether the development will have a direct, indirect or cumulative adverse impact on terrestrial, aquatic or migratory animals or vegetation,	Negligible impact. Refer to Section 6.1 of this Addendum REF.
6.7(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 <i>Water Management Act 2000</i> , or (ii) a permit under the <i>Fisheries Management Act 1994</i> ,	<i>Water Management Act 2000</i> and/or <i>Fisheries Management Act 1994</i> approvals are not required for the proposed modification.
6.7(1)(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,	The proposed modification would not affect a natural waterbody.
6.7(1)(d)	whether the development will have an adverse impact on wetlands that are not in the coastal wetlands and littoral rainforests area,	There are no wetlands near the proposal.
6.7(1)(e)	whether the development includes adequate safeguards and rehabilitation measures to protect aquatic ecology,	The proposal does not involve the disturbance of aquatic environment.
6.7(1)(e)	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.	Negligible impact. Refer to Section 6.2 of this Addendum REF.
6.7(2)(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,	Negligible impact. Refer to Section 6.1 of this Addendum REF.
6.7(2)(b)	the development will not have a direct, indirect or cumulative adverse impact on aquatic reserves,	The proposal would not affect an aquatic reserve.
6.7(2)(c)	if a controlled activity approval under the <i>Water Management Act 2000</i> or a permit under the <i>Fisheries Management Act 1994</i> is required in relation to the clearing of riparian vegetation—the approval or permit has been obtained,	<i>Water Management Act 2000</i> and/or <i>Fisheries Management Act 1994</i> approvals are not required for the proposed modification.

Reference	Matter	Comment
6.7(2)(d)	the erosion of land abutting a natural waterbody or the sedimentation of a natural waterbody will be minimised,	Erosion and sedimentation control measures are included in Section 7.2.
6.7(2)(e)	the adverse impact on wetlands that are not in the coastal wetlands and littoral rainforests area will be minimised.	There are no wetlands near the proposal.
6.8(1)	the likely impact of the development on periodic flooding that benefits wetlands and other riverine ecosystems.	There are no wetlands near the proposal. The proposal would not affect other riverine ecosystems.
6.8(2)(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	Negligible impact. Refer to Section 6.2 of this Addendum REF.
6.8(2)(b)	have an adverse impact on the natural recession of floodwaters into wetlands and other riverine ecosystems.	There are no wetlands near the proposal. The proposal would not affect other riverine systems.
6.9(1)(a)	the likely impact of the development on recreational land uses in the regulated catchment,	The proposal would have no adverse impact on recreational land uses.
6.9(1)(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.	Not relevant to the proposal.
6.9(2)(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 will improve public access to natural waterbodies by reinstating access through Settlers Road.
6.9(2)(b)	New or existing points of public access between natural waterbodies and the site of the development will be stable and safe,	Not relevant to the proposal.
6.9(2)(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.	Not relevant to the proposal.