



NSW National Parks and Wildlife Service

Review of environmental factors: Feeder 9L5 Augmentation Stage 1 – Smeaton Grange SS to Nepean TS

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Document control

Version	Date	Author/ Modified by	Approved by
Rev A	20/03/2024	██████████	██████████
Rev B	29/04/2024	██████████	██████████

1. Introduction

1.1 Brief description of the proposal

Proposal summary

Endeavour Energy propose to upgrade 2.7 km of overhead conductors in 2 sections between the Nepean Transmission Substation and the Smeaton Grange Switching Station. This would involve:

- replacement of 3 timber H poles with taller 14.7 m high timber H poles
- replacement of 1 timber 3-pole structure with 1 taller 16.4 m high steel 3-pole structure, and replacement of 3 stays that support it
- replacement of approximately 2.7km of overhead “Lime” conductors in 2 sections with High Tension Low Sag “Brussels” conductors.

Purpose

The proposed conductor replacement would increase capacity of the electricity distribution system which will facilitate future load demand in the area. In addition to this, there are a number of low clearance violations on current conductors. To rectify this, some pole heights need to be increased.

Location

Section 1

The first section of the proposal is not on lands reserved under the National Parks and Wildlife Act: The line upgrade would run from Smeaton Grange Switching Station on Bulette Drive, to Main Street, Mt. Annan via existing easement. The easement runs parallel to the back end of Downes Crescent, Waterworth Drive, crossing Narellan Road, continuing parallel to Main Street and finally crossing Main Street). Refer to Figure 1A.

Section 2:

The second section of the proposed line upgrade is on land reserved under the National Parks and Wildlife Act. It would run from the northernmost point of William Howe Regional Park, behind 20 Edward Howe Place, Narellan Vale. It travels in a straight line through William Howe Regional Park, finishing adjacent to Liz Kernohan Drive (behind Cassidy Street in Spring Farm). Refer to Figure 1B.

NPWS Area

Sydney and surrounds region

Council/Local Government Area

Camden Council

NSW State electorate

Camden

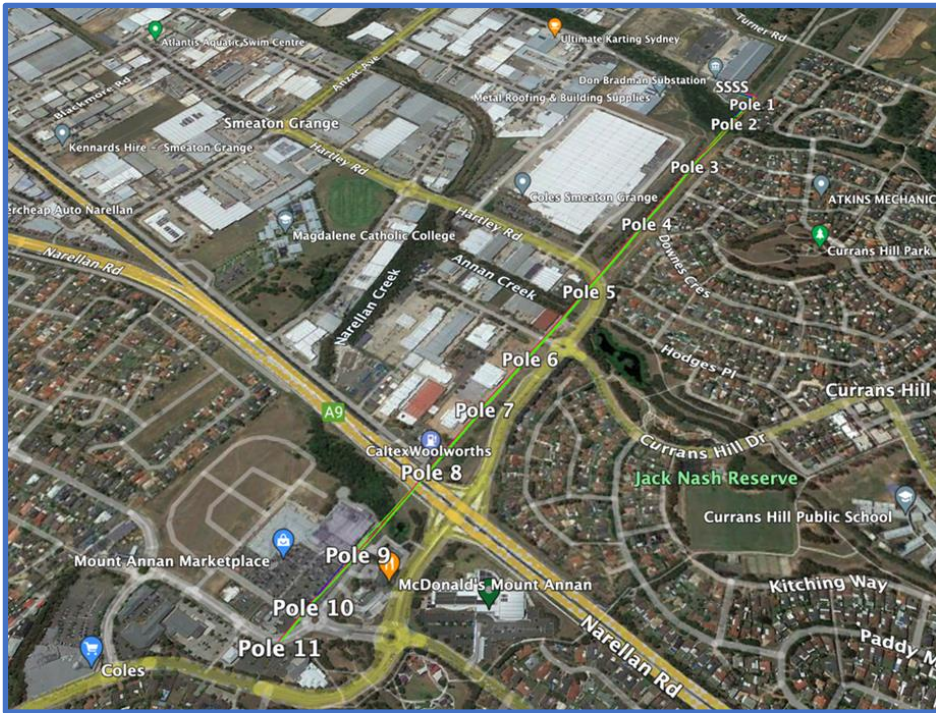


Figure 1: Location of Section 1 of the proposed works

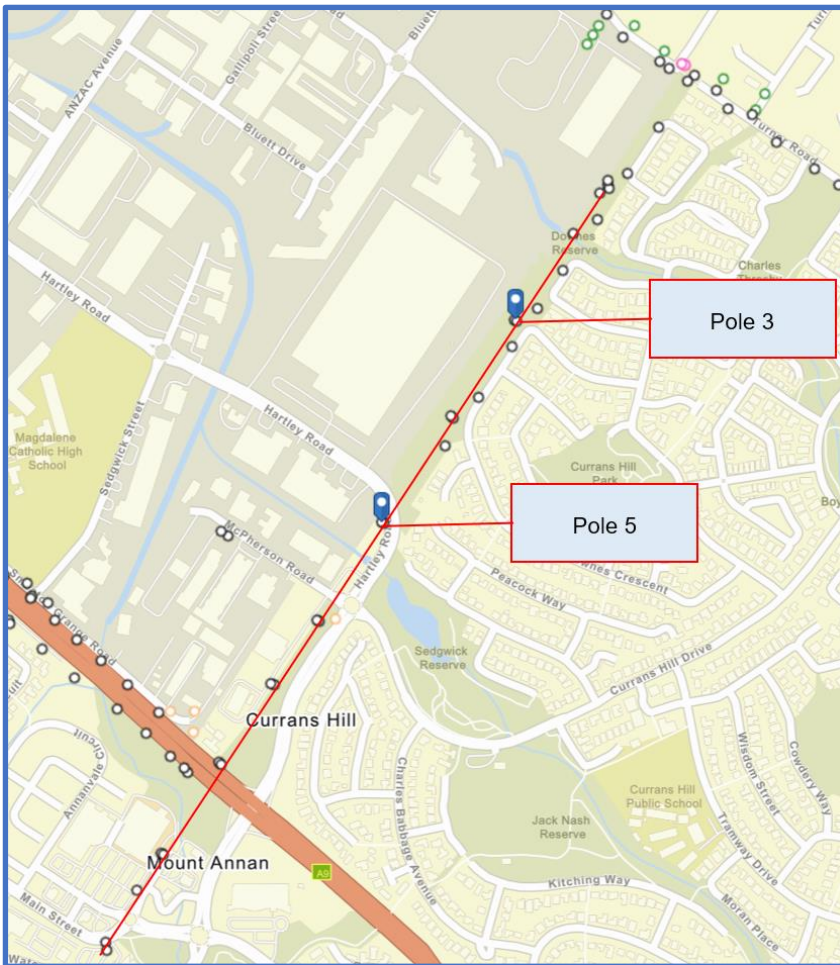


Figure 2: Map showing location of pole replacement in Section 1 of proposed works.

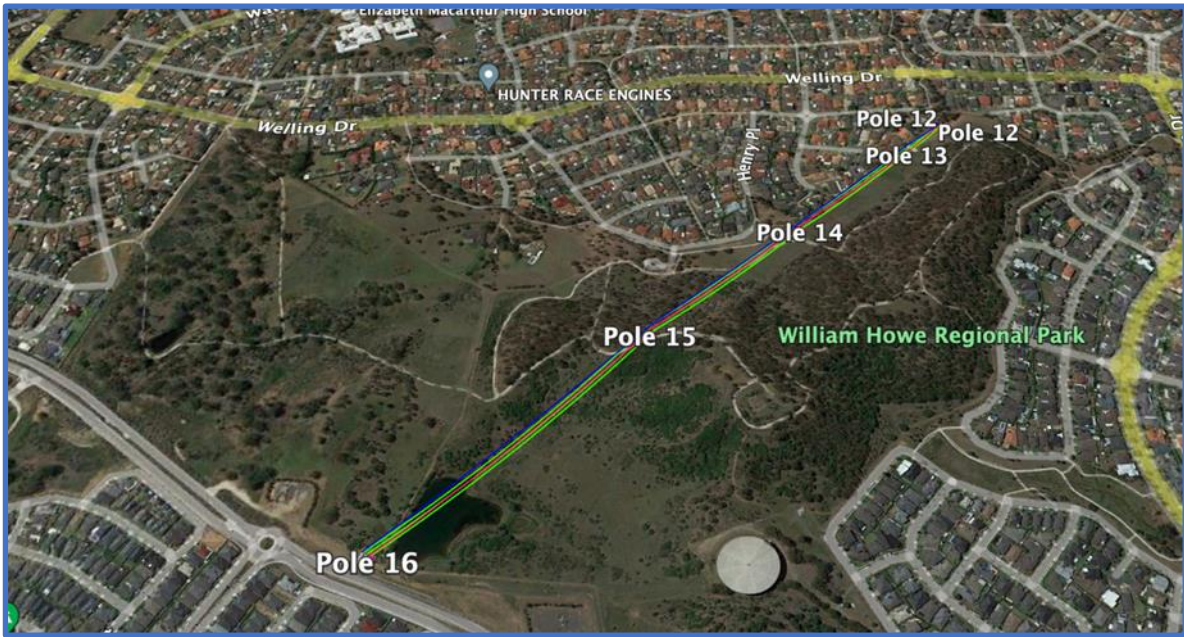


Figure 3: Location of Section 2 of the proposed works



Figure 4: Map showing location of pole replacement in Section 2 of the proposed works

1.2 Estimated capital cost of proposal

The estimated cost of the proposed works is \$851,000.

1.3 Estimated duration of proposal

The proposal would take approximately 20 shifts to complete. These shifts would be conducted in blocks, over the course of 12 weeks. The proposed works are scheduled to commence in May 2024 and be completed in July 2024. However, this is dependent on weather and other external factors that may impact the approval and delivery of the proposed works.

2. Proponent's details

Contact name: [REDACTED]

Position: Project Manager

Street address: Endeavour Energy, Level 40-42, 8 Parramatta Square, 10 Darcy Street, Parramatta, NSW, 2150.

Postal address: PO Box 811, Seven Hills, NSW, 1730.

Contact phone number: Office: [REDACTED]

Email: [REDACTED]

Organisation/Agency: Endeavour Energy

ACN/ABN: 11 247 365 823

3. Permissibility and assessment pathway

3.1 Permissibility under NSW legislation

The following sections outline how the activity is permissible under applicable NSW legislation.

3.1.1 National Parks and Wildlife Act 1974

On land reserved or acquired under the National Parks and Wildlife Act 1974

Insert a brief justification explaining how the proposal is permissible on land reserved or acquired under the *National Parks and Wildlife Act 1974* (NPW Act)

The proposal is consistent with, and permissible under, the *National Parks and Wildlife Act 1974* (NPW Act), including s2A, s30H and the William Howe Regional Park Plan of Management.

Section 2A of the NPW Act

The proposed works are consistent with the objective of Section 2A of the NPW Act. The proposed works would not inhibit the ability of the William Howe Regional Park to conserve nature and foster public appreciation of nature, cultural heritage, and conservation.

Section 30H of the NPW Act

The proposed works are consistent with the management principles for regional parks as detailed in Section 30H of the NPW Act. The proposed works would not inhibit the ability of the William Howe Regional Park to provide an outdoor setting for recreation, and would not negatively impact on the landscape values, natural values, or cultural values of the park. The works would not inhibit sustainable visitor or tourist use of the park or any built structure within the park. The proposal does not seek to conduct works within a 'special area'.

Section 153C of the NPW Act

Section 153C of the NPW Act does not apply to the proposed works as they would be conducted within an active property easement held by Endeavour Energy. Endeavour Energy is not seeking to establish a new easement that would require any additional lease, license or easement under the NPW Act.

William Howe Regional Park Plan of Management

The William Howe Regional Park Plan of Management provides the following specific management directions for the management of the park:

- Work collaboratively with the major landowners along the proposed Narellan and Spring Farm Bush Corridor to promote integrated and sustainable planning; to maximise provision of recreational facilities and linkages to recreation areas; and to facilitate community engagement, land management and conservation outcomes.
- Promote and facilitate use of the park for short day use visits and as a thoroughfare for walking and cycling.
- Enhance the park's natural heritage values through the re-establishment of locally occurring native plants within the park landscape.
- Recognise and protect traditional and contemporary Aboriginal heritage, landscape and spiritual values in consultation with the local Aboriginal community.
- Protect and enhance the park's colonial cultural landscape, the lookout and associated view corridors.
- Work with relevant authorities to ensure the park is a safe environment, free of vandalism and antisocial behaviour

The proposed works would not impede or negatively impact on any of these management directions. The proposed works do not include the removal of vegetation, although very limited vegetation trimming may be required. The works are entirely within the current easement. As such the proposal would not impact the Spring Farm Bush Corridor, or the reestablishment of locally occurring plants.

The proposed works would not permanently inhibit the use of the park for day visits or as a throughfare for pedestrians and cyclists. Public access to the area around the proposed works whilst they are being conducted would be restricted. However use of the loop trail would be retained during the proposed works.

The proposed works would not impact any Aboriginal or non-Aboriginal heritage places, items or areas.

The proposal would not impact the safety of the park and would not impact the frequency of vandalism in the park.

The Plan of Management addresses the easements within the Park in Section 5.2, stating that:

An easement for transmission lines traverses the northern portion of the park from the South Western Dam to the north-east corner near Ironbark Ridge Reserve, permitting Endeavour Energy access to all structures and for maintenance of adequate safety clearances... Due to the narrow configuration of sections of the park and its small size, any further utility developments will potentially significantly impact the values of the park. Hence any future development must be consistent with the protection of the setting and visual amenity of the lookout, its identified view corridors, and the natural, cultural and recreation values of the park.

The proposed works would be conducted within the active existing easement referenced above, partly for the purpose of maintaining adequate safety clearances. The proposed works do not involve construction of additional infrastructure such as electricity lines within the park, only replacement of existing poles and conductors. As such, the proposed works would be consistent with the protection of the scenic, natural, cultural and recreation values of the park.

Assets of intergenerational significance

If relevant, identify whether the activity is on land identified as an asset of intergenerational significance (AIS) or in close proximity to an AIS, and justify that it is consistent with the purpose of the AIS's declaration

A search of the NSW NPWS AIS online portal on 11 March 2024 did not identify any Assets of Intergenerational Significance in the vicinity of the proposed works; refer to Figure 5.

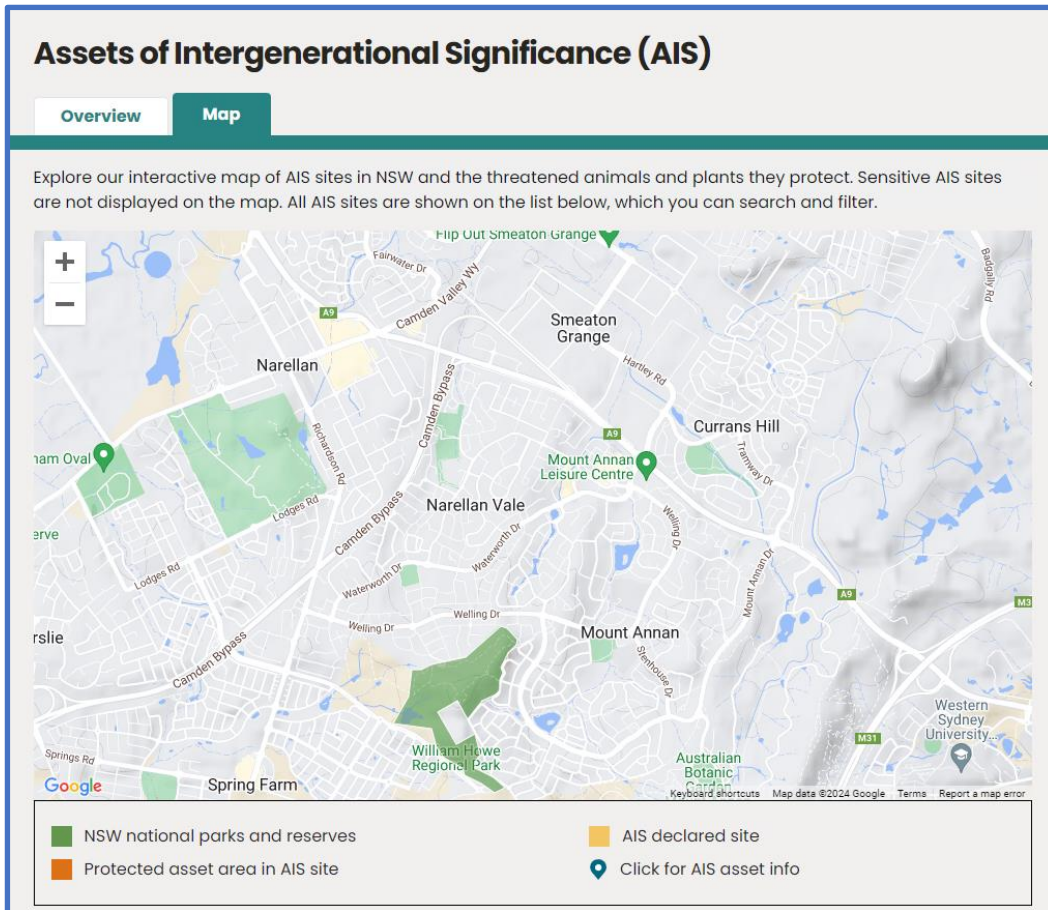


Figure 5: NSW NPWS AIS online portal search results

Leasing, licensing and easement provisions

If relevant, provide a brief explanation on how the activity is for a purpose that may be subject to a lease, licence or easement under the NPW Act – otherwise insert NA

The proposed works do not require any additional lease, license or easement under the NPW Act. The proposed works would be conducted within an active property easement held by Endeavour Energy; refer to Figure 6 and Figure 7 below. This easement is registered on the land title held by NPWS for Lot 2, DP 809797 as being vested in Prospect Electricity. Prospect Electricity was one of the predecessor organisations that has now become Endeavour Energy. A full history of Endeavour Energy’s predecessors is provided as Appendix C, the relevant details of which are summarised below.

- On 1 October 1995, Illawarra Electricity and Prospect Electricity were dissolved and MetSouth Energy constituted as an electricity distributor, and any interests held by Illawarra Electricity and Prospect Electricity in land situated within MetSouth Energy’s distribution district were transferred to MetSouth Energy.
- On 24 May 1996, the name of MetSouth Energy was changed to Integral Energy Australia.
- On 2 March 2011 the name of Integral Energy Australia was changed to Endeavour Energy.
- On 14 June 2017, Endeavour Energy was converted into Epsilon Distribution Ministerial Holding Corporation. The Endeavour Energy distribution network was leased to Endeavour Energy Network Asset Partnership, while operation of the distribution network was sub-leased to Endeavour Energy Network Operator Partnership, trading as Endeavour Energy.

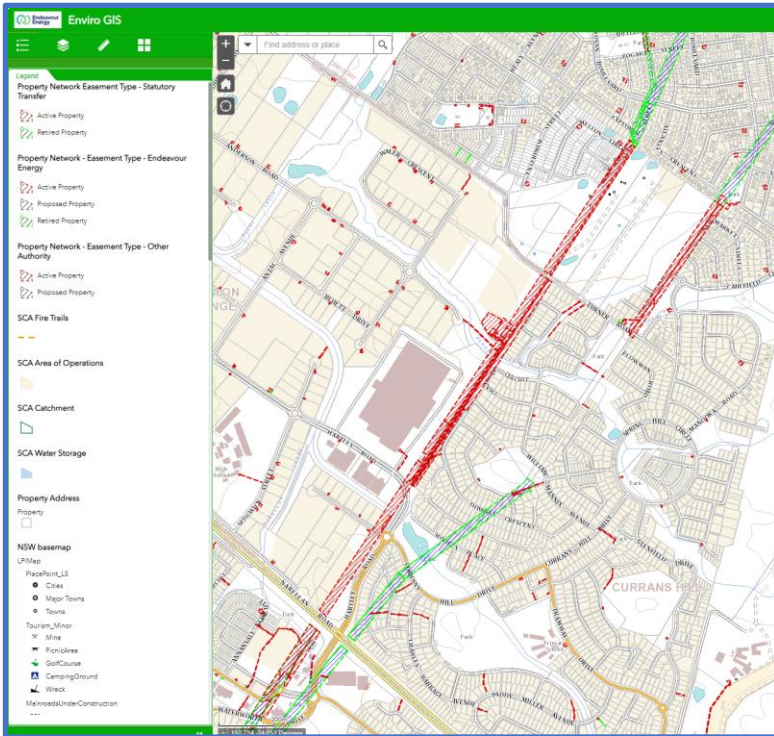


Figure 6: Stage 1 property easement map

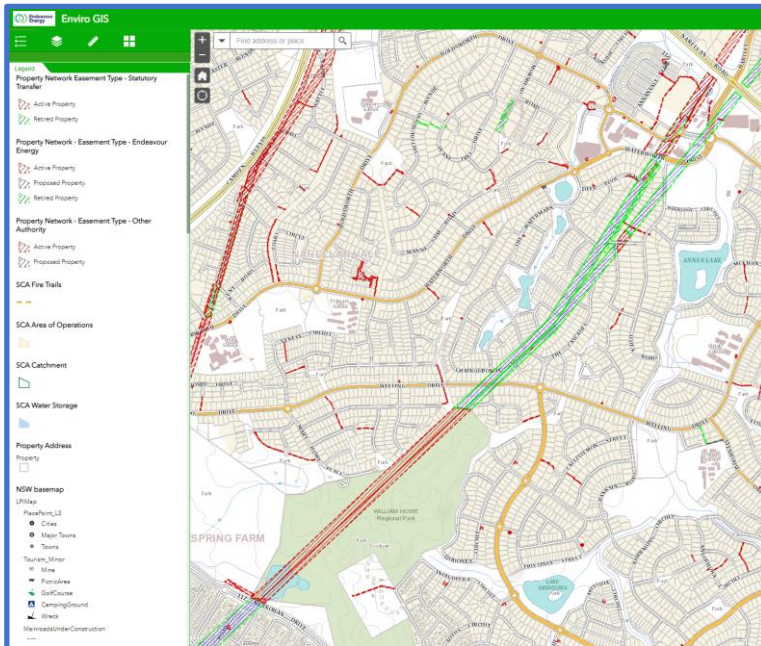


Figure 7: Stage 2 property easement map

Internal NPWS projects

The proponent for the proposed works is Endeavour Energy; the works would not be considered an internal NPWS project.

3.1.2 Wilderness Act 1987 (for activities in wilderness areas)

The proposal is not within a declared wilderness area; as such the *Wilderness Act 1987* does not apply.

3.1.3 Biodiversity Conservation Act 2016

The proposed works would be conducted in accordance with the *Biodiversity Conservation Act 2016* (BC Act). The works will transect a patch of vegetation marked as Cumberland Plain Woodland in the Sydney Basin Bioregion. Within this area, one H pole, Pole 15, will be replaced. This will require excavation within this area. However, this easement has been previously disturbed during the installation of the distribution network and the only vegetation to be impacted during the works would be grasses, and the possible trimming of understorey plants within a 2m radius of the new poles if necessary. This trimming would be conducted in accordance with the Endeavour Energy Standard MMI 0013 - Vegetation Clearance Management.

The proposed works would not impact land to which a biodiversity stewardship site agreement applies.

If any woody weeds are identified within the immediate worksite where poles 13 and 15 are to be replaced, they would be removed and the stumps treated, as opposed to being trimmed.

3.1.4 NSW Reconstruction Authority Act 2022

The proposal is compliant with the *NSW Reconstruction Authority Act 2022* in that the proposed works would improve the reliability and capability of the electricity distribution network during a disaster.

3.1.5 Rural Fires Act 1997

The proposal does not include works within a rural fire district.

3.2 Environmental Planning and Assessment Act 1979

3.2.1 Assessment pathway

It is confirmed that a REF is the applicable assessment pathway because each of the following apply:

- The activity is not declared to be state significant infrastructure under s 2.13 of the Planning Systems SEPP.
- The activity may be undertaken without development consent under the provisions of s 2.44(1)(b) of the Transport and Infrastructure SEPP as it is:
 - development for the purpose of an electricity transmission or distribution network that would be carried out by an electricity supply authority or public authority
 - is carried out on land to which the *National Parks and Wildlife Act 1974* applies over which an easement has been granted and is not contrary to the terms or nature of the easement.
- The activity is **not** identified as requiring development consent under another environmental planning instrument that prevails over the Transport and Infrastructure SEPP. In particular:
 - The activity is not in a coastal wetland or littoral rainforest, or it does not otherwise meet the criteria for development requiring consent outlined in s 2.7(2) of the Resilience and Hazards SEPP.
 - The activity is not coastal protection works or, if coastal protection works, the activity is one of the types of coastal protection works that may be carried out by or on behalf of a public authority without development consent.

- The activity is not a type of development requiring development consent under s 2.9 of the Resources and Energy SEPP.
- The activity is not declared to be exempt development under an environmental planning instrument or fails to fully meet the requirements for exempt development.

3.2.2 Strategic plans

The proposed works would be conducted within the Western Sydney District and meets Planning Priority W3 and W5 by supplying the electricity infrastructure that would deliver the services, social infrastructure, housing, jobs and services required by the plan.

3.3 Other relevant NSW legislation

3.3.1 Coal Mine Subsidence Compensation Act 2017

A search of the NSW Planning Portal did not identify areas of mine subsidence within the vicinity of the proposed works. The proposal is approximately 1.3 km north of the nearest mine subsidence district.

3.3.2 Fisheries Management Act 1994

The proposal would not trigger requirements under the FM Act. The majority of the works are replacing above-ground conductors. The poles that do require replacement are not within a waterway or riparian zone.

3.3.3 Heritage Act 1977

Searches of the NSW State Heritage Register and the NSW Planning Portal conducted on 11 March 2024 did not identify any Local, State or Nationally listed Heritage items or areas within the vicinity of the works (refer to Figure 8 and Figure 9).

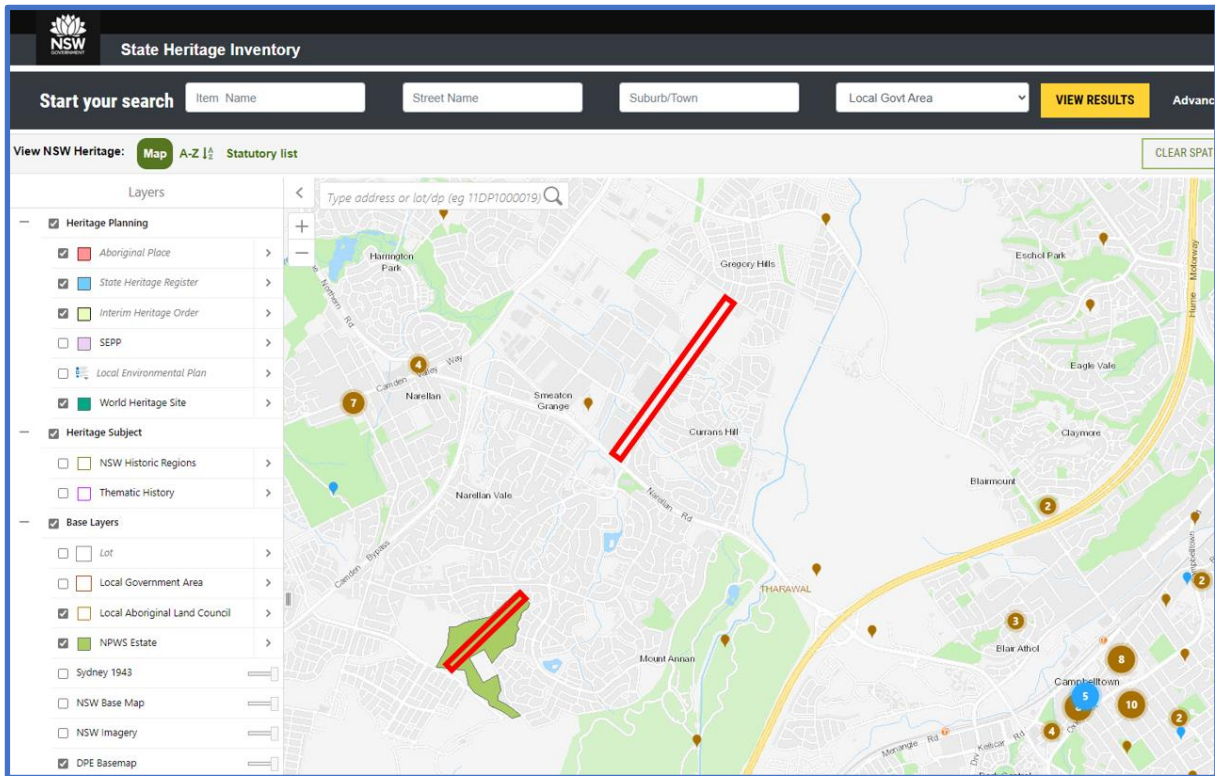


Figure 8: NSW State Heritage Register search

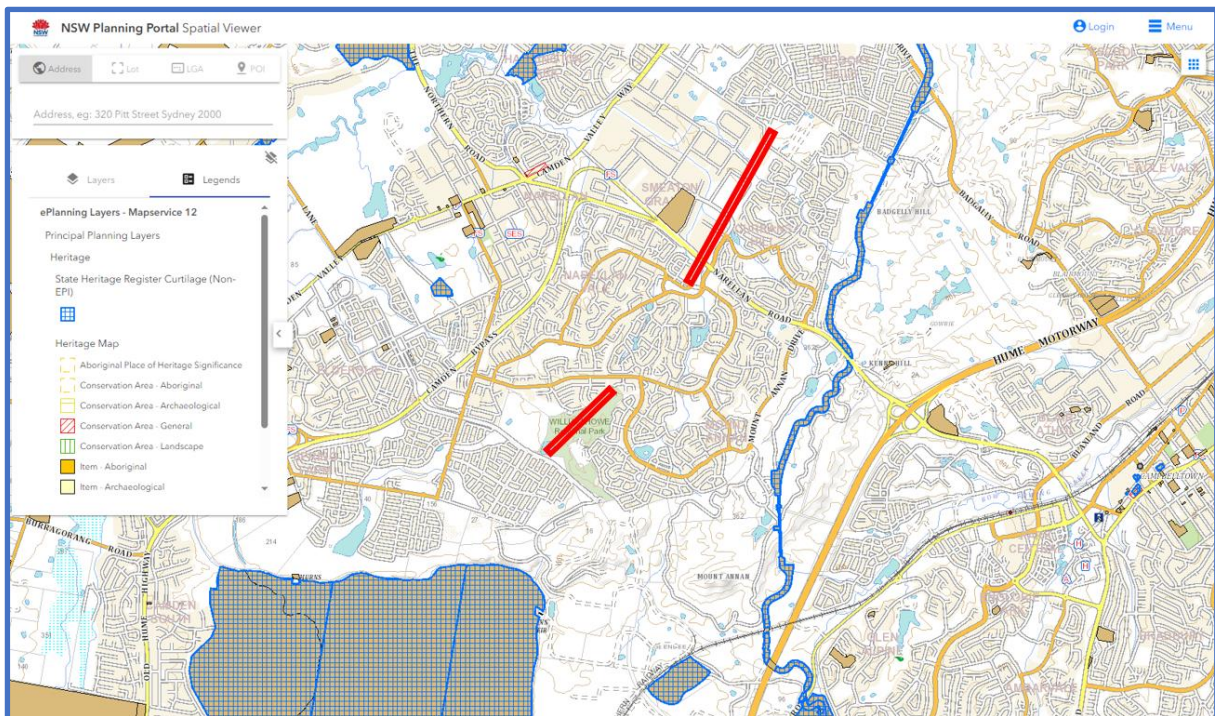


Figure 9: NSW Planning portal search for heritage items

3.3.4 Marine Estate Management Act 2014

The proposal would not impact any marine park or aquatic reserve.

3.4 Commonwealth legislation

3.4.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) does not apply as the activity will not affect any of the following:

- world heritage or national heritage values of a place on the World Heritage List or National Heritage List
- the ecology of a Ramsar wetland
- nationally listed threatened species and ecological communities or listed migratory species.

The proposed works does have the potential to impact a threatened ecological community listed under the EPBC Act. However, a suitably qualified and experienced ecologist has inspected the site and conducted a 5-part test of significance which determined that the proposed development is not likely to have a significant effect on the Cumberland Plain Woodland. The inspection report and assessment of significance is contained within Appendix A.

3.4.2 Native Title Act 1993

The proposed works is not on land subject to an Indigenous land use agreement. The proposal would not be considered a future act as it would not affect Native Title rights or interests, and the works would be within an existing easement.

3.5 Consistency with national parks policy

There are no National Parks and Wildlife policies published on the Park Policy webpage that relate to the proposed works.

3.6 Summary of licences and approvals

3.6.1 Approval required from National Parks and Wildlife Service

Provide a brief description of the type of approval sought from NPWS.

This Review of Environmental Factors has been submitted for the purpose of gaining approval from National Parks and Wildlife Service to conduct the proposed works.

3.6.2 Publication triggers

The proposal does not trigger publication of the REF, see Table 1 below.

Table 1. Triggers for publication of the Review of Environmental Factors

Permit or approval	Applicable?
Fisheries Management Act, sections 144, 200, 205 or 219	No
Heritage Act, section 57(1) (commonly known as a section 60 and not an Exemption under section 57(2))	No
National Parks and Wildlife Act, section 90 (AHIP)	No
<i>Protection of the Environment Operations Act 1997</i> , sections 47–49 or 122	No

4. Consultation – general

4.1 Statutory consultation

No statutory correspondence is required for the proposed works. However, pursuant to the NSW Code of Practice for Authorised Network Operators and the Endeavour Energy Consultation Protocol, Camden Council would be notified of the works 40 days prior to the commencement of construction.

4.1.1 Transport and Infrastructure SEPP

The Transport and Infrastructure SEPP requires consultation with relevant authorities as identified in the following table.

Table 2. Consultation triggers under the Transport and Infrastructure State Environmental Planning Policy

Authority (TISEPP section)	Trigger	Applicable to proposal?
Consultation with local council (s 2.10)	Development with impacts on council infrastructure or services (such as stormwater, sewer, water, roads and footpaths)	No
Consultation with local council (s 2.11)	Development with impacts on heritage items listed under the local environmental plan (LEP)	No
Consultation with local council (s 2.12)	Development that will change flood patterns on flood-labile land	No
Consultation with State Emergency Service (s 2.13)	Development on flood-labile land	No
Consultation with local council (s 2.14)	Development that is inconsistent with a certified coastal management program affecting land within the mapped coastal vulnerability area.	No
Consultation with NPWS (s 2.15(2)(a))	Development adjacent to land reserved or acquired under the NPW Act	Yes
Consultation with NPWS (s 2.15(2)(b))	Development on land in Zone C1 that is yet to be reserved under the NPW Act	No
Consultation with Transport for NSW (s 2.15(2)(c))	Development comprising a fixed or floating structure in or over navigable waters	No
Consultation with the Director of the Siding Spring Observatory (s 2.15(2)(d))	Development that may increase the amount of artificial light in the night sky and that is on land within the mapped dark sky region	No
Consultation with the Cwth Department of Defence (s 2.15(2)(e))	Development located within the buffer around the defence communications facility near Morundah as mapped under the Lockhart, Narrandera or Urana LEPs	No
Consultation with the Subsidence Advisory NSW (s 2.15(2)(f))	Development on land in a mine subsidence district.	No

Authority (TISEPP section)	Trigger	Applicable to proposal?
Consultation with the Willandra Lakes Region World Heritage Advisory Committee and Heritage NSW (s 2.15(2)(g))	Development on, or reasonably likely to have an impact on, a part of the Willandra Lakes Region World Heritage Property	No
Consultation with the Western Parkland City Authority (s 2.15(2)(h))	Development within a Western City operational area (Western Parkland City Authority Act 2018, Schedule 2) with a capital investment value of \$30 million or more	No
Consultation with Transport for NSW (s 2.221)	Traffic-generating development listed in Schedule 3	No

Consultation with NPWS (s 2.15(2)(a))

Lyndal Kaye, Ranger, Cumberland Area, Greater Sydney Branch, NSW National Parks and Wildlife Service, was emailed on 23 February 2024 to inform him that Endeavour Energy was preparing a Review of Environmental Factors for the proposed works. Mr Kaye had previously been notified of the project by the Project Manager, and discussed it with him in a telephone conversation, in September 2022 when it was first proposed. Mr Kaye replied on 23 February 2024 with some items for consideration:

- “there is a small population of Easter Grey Kangaroos in the park along with echidnas, possums, bats and birdlife”
- William Howe Regional Park Plan of Management URL
- “Phytophthora protocols need to be used for all vehicles, plant and equipment including boots on entering and leaving the park. The park currently does not have phytophthora that we are aware of however it is easily transported on equipment, plant, vehicles and boots”

Mr Kaye informed Endeavour Energy that NPWS is about to commence a bush regeneration project in the Park targeting African Olive, and asked if it would consider undertaking control of this species on its easement between Poles 14 and 15. Endeavour Energy replied to ask if NPWS could provide the phytophthora protocol they would like implemented.

4.1.2 Other statutory consultation

The proposal does not require and additional statutory consultation.

4.2 Targeted consultation

4.2.1 Adjacent landowners

Landowners adjacent to the works will be consulted in accordance with the NSW Code of Practice for Authorised Network Operators and the Endeavour Energy Consultation Protocol. They will be advised of the proposed works 21 days prior to the commencement of construction.

4.2.2 Wider community consultation and/or notification of works

Signage notifying park visitors of the works would be placed at all park entrances prior to commencement. Worksites where there would be a possibility of park visitors coming into close proximity of works, such as on the unsurfaced vehicle track, would be barricaded or taped off to prevent access and ensure visitor safety. Signage would be placed on the unsurfaced vehicle track approximately 150 m to the west and east of the Pole 15 worksite to warn approaching cyclists and walkers of works and partial track closure ahead.

4.2.3 Interest groups and/or notification

No interest groups have been identified as requiring consultation for the proposed works.

5. Consultation – Aboriginal communities

5.1 Native title notification requirements

1. Is the land subject to an Indigenous land use agreement (ILUA)? No

The proposed works area is not subject to a Indigenous land use agreement.

2. Has native title been **extinguished**? No or unclear

There are no Native Title claims associated with the proposed works.

3. Has there been a determination of native title applicable to the land or is there a native title claim pending? No

A search of the National Native Title Tribunal Spatial Data portal on 18 March 2024 did not identify and Native Title claims or determinations applicable to the proposed works area.

4. If native title is not confirmed as extinguished, **and** the activity is occurring on land reserved as park on or before 23 December 1996, is it an act in accordance with the purpose of reservation **and will it:**

- a. be a 'public work' as per subdivision 24J of the Native Title Act (e.g. a building or other structure that is fixed to the landscape, a road or bridge, a well or a bore, or involves major earthworks, carried out by a public authority)

or

- b. involve the grant of a lease or easement?

Yes

A search of the Native Title National Native Title Tribunal Spatial Data portal on 15 March 2024 did not identify any impacts to areas of Native Title.

The proposal will be undertaken within an existing easement.

5. If native title is not confirmed as extinguished and the circumstances of Question 4 do not otherwise apply (e.g. the park was reserved after 23 December 1996), is the activity either:

- a. a facility for service to the public (as defined in subdivision 24K of the Native Title Act)

or

- b. a low-level activity (as defined in subdivision 24L of the Native Title Act)?

A search of the Native Title National Native Title Tribunal Spatial Data portal on 15 March 2024 did not identify any impacts to areas of Native Title.

5.2 Parks under joint management arrangements other than an indigenous land use agreement

Is the park's management subject to another joint management arrangement such as a memorandum of understanding?

The park is not under a joint management arrangement. It is under the operational control of NPWS.

5.3 Other parks

The proposed works would not impact any areas of Aboriginal cultural heritage significance, as such no consultation with the Local Aboriginal Land Council is required.

6. Proposed activity (or activities)

6.1 Location of activity

Table 3. Summary of activity location

Description of location	<p>The first section of the proposal is not on lands reserved under the National Parks and Wildlife Act: The line upgrade would run from Smeaton Grange Switching Station on Bulette Drive, to Main Street, Mt. Annan via existing easement. The easement runs parallel to the back end of Downes Crescent, Waterworth Drive, crossing Narellan Road, continuing parallel to Main Street and finally crossing Main Street). Refer to Figure 1A.</p> <p>The second section of the proposed line upgrade is on land reserved under the National Parks and Wildlife Act. It would run from the northernmost point of William Howe Regional Park, behind 20 Edward Howe Place, Narellan Vale. It travels in a straight line through William Howe Regional Park, finishing adjacent to Liz Kernohan Drive (behind Cassidy Street in Spring Farm). Refer to Figure 1B.</p>
Site commonly known as	N/A
Park name	William Howe Regional Park
Other tenures	N/A
Lot/DP	<p>Poles 1 to 3: Lot 987, DP 1010343</p> <p>Pole 4: Lot 17, DP 881644</p> <p>Pole 5: Lot 1, DP 872510</p> <p>Pole 6: Lot 1, DP 1206982</p> <p>Pole 7: Lot 1, DP 1206982 and Lot 101, DP 851430</p> <p>Pole 8: Lot 1, DP 1206982 and Lot 100, DP 851430</p> <p>Pole 9: Road reserve and Lot 1, 1158865</p> <p>Pole 10: Lot 1, 1158865</p> <p>Pole 11: Road reserve</p> <p>Poles 12 to 16: William Howe Regional Park - Lot 2, DP 809797</p>
Street address	N/A
Site reference	N/A

6.2 Description of the proposed activity

Include a description of the activity. All aspects of the proposed activity should be described.

6.2.1 The proposed activity: pre-construction, construction, operation and remediation

Endeavour Energy propose to upgrade 2.7 km of overhead conductors in 2 sections between Nepean Transmission Substation and Smeaton Grange Switching Station. This would involve:

- replacement of 3 timber **H poles** (see description and image below) with longer 14.7 m tall timber H poles. These are Poles 3, 5 and 15 in the figures.
- replacement of 1 timber **3-pole structure** (see description and image below) with 1 longer 16.4 m tall steel 3-pole structure, and replacement of 3 accompanying **ground stays** (see description and image below) to support it. This is Pole 13 in the figures.
- replacement of approximately 2.7km of overhead “Lime” **conductors** in 2 sections with High Tension Low Sag “Brussels” **conductors**.

The terms in bold above are defined and illustrated below.

A **H pole** is a pair of vertical poles spaced 4.5 m apart with a horizontal cross-beam joining them at the top and extending beyond the vertical poles (see image below).

A **3-pole structure** is a set of 3 vertical poles not connected to each other, spaced 5m apart in a line perpendicular to the conductors they support (see image below).



Figure 10: Examples of a H pole (left) and a 3-pole structure (right)

Ground stays are lengths of metal cable and rod that are anchored in the ground with a concrete anchorage and attach to poles near the top to provide structural support.

Conductors are the lengths of metal cable that poles support which conduct electricity. They are commonly known as “power lines”.

The pole replacement works would be completed prior to replacing the conductors.

Replacement of Poles

The replacement of the 3 H poles and 1 3-pole structure would involve:

- drilling holes 2.3 m deep and 750 mm in diameter with a truck-mounted borer to accommodate new poles. These holes would be dug within 1.5 to 2.0 m of existing poles.

- lifting the new poles into place with a truck-mounted crane and setting in place with a concrete footing
- extracting the existing redundant poles from the ground with the truck-mounted crane and loading them onto a truck for re-use or recycling
- filling the holes from the extracted poles with spoil from the nearest new hole and compacting it with the truck-mounted borer
- removing any excess spoil from the site with a tipper truck for disposal at an appropriately licenced waste facility

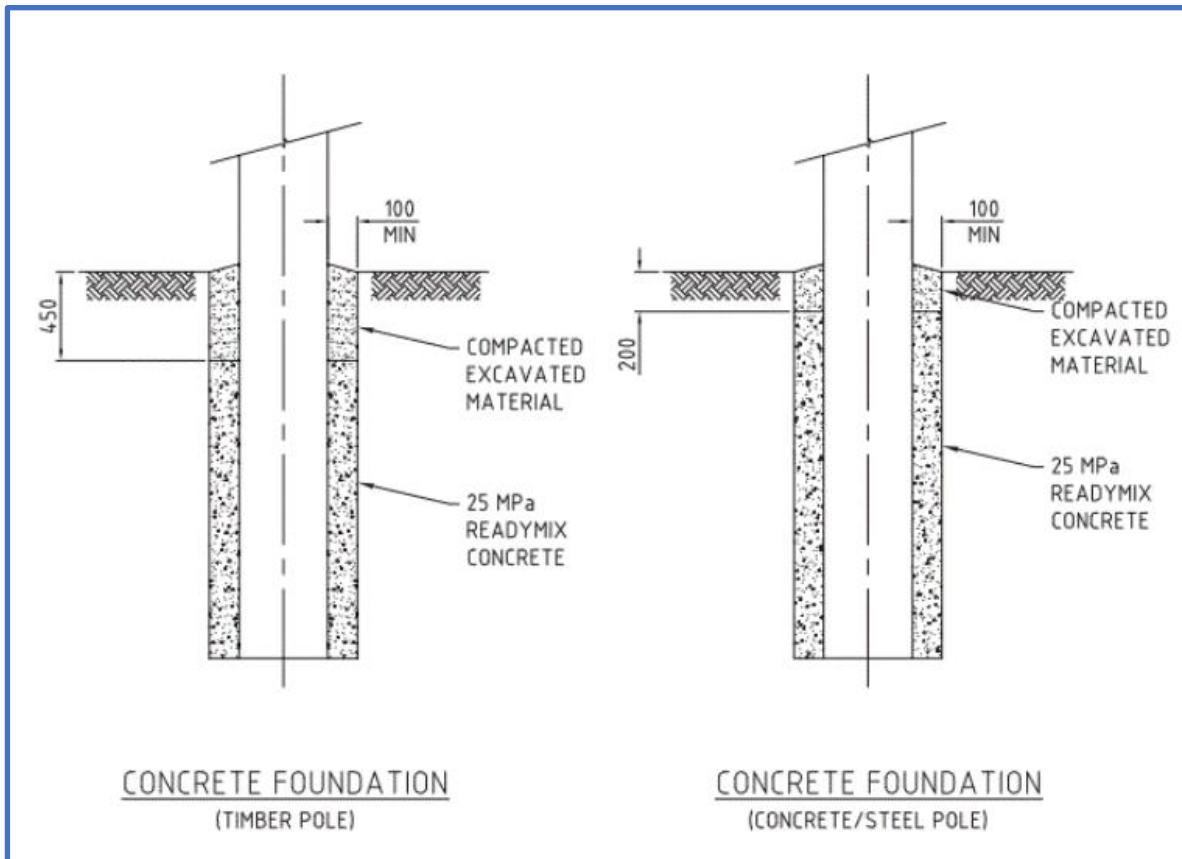


Figure 11: Construction diagrams showing the foundations of timber and steel poles



Figure 12: Example of pole replacement works

Replacement of Stays

Replacement of the 3 stays to support the new 3-pole structure would involve a similar process to replacing the poles:

- drilling holes 2.5 m deep and 750 mm in diameter with a truck-mounted borer to accommodate the concrete anchorages for the stays
- inserting the stay rods into the holes
- filling the holes with ready mix concrete around the stay rods to approximately three quarters full
- filling the remaining space in the hole with spoil from the same hole and compacting it with the truck-mounted borer
- removing the existing stay anchors with an excavator
- filling in the holes from the existing stay anchors with spoil from the nearest new hole and compacting it with the truck-mounted borer
- removing any excess spoil from the site with a tipper truck for disposal at an appropriately licenced waste facility

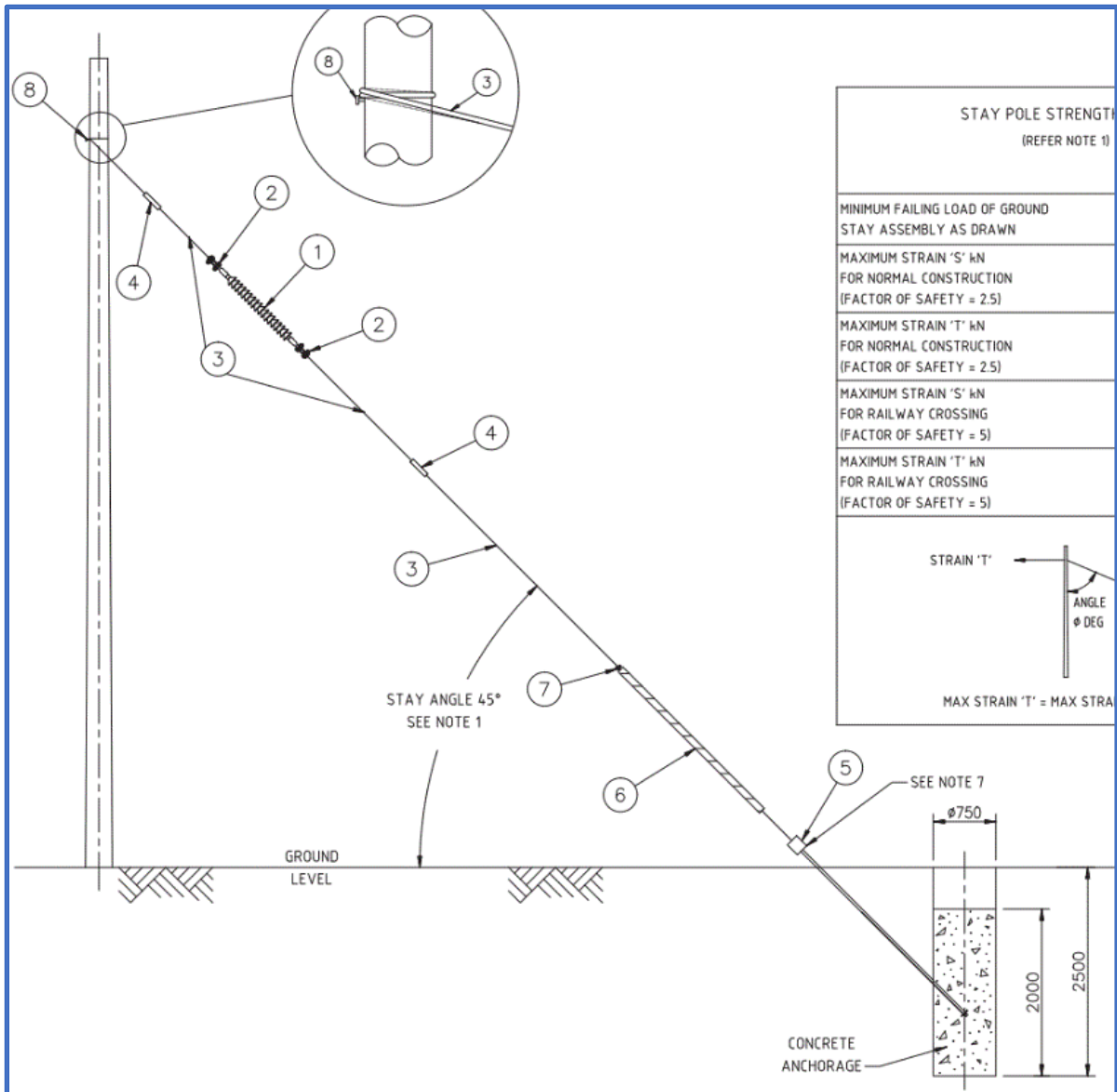


Figure 13: Construction diagram showing ground stays

Replacement of conductors

The existing “Lime” conductors would be replaced with High Tension Low Sag “Brussels” conductors in 1 to 2 km sections, depending on the length that can be successfully completed in one day. To replace the conductors, rollers are placed on top of the chosen pole and the conductor is lifted on to the rollers. The new conductors are then spliced onto the existing conductors. At the other end of the chosen section, a large winch winds the old conductor off, while pulling on the new conductor across the defined section. The rollers are then removed, and the conductors are clipped into the power pole. To cross Narellan Rd, one conductor would be replaced at a time, while traffic is stopped. The conductor never touches the ground and hangs in the air while being replaced. Once one conductor is replaced, the road is re-opened until the traffic clears, before the next conductor replacement begins.



Figure 14: Example of conductor replacement process

Access

The access routes that would be used to complete the works are shown in the satellite images below. The access routes are marked in yellow.

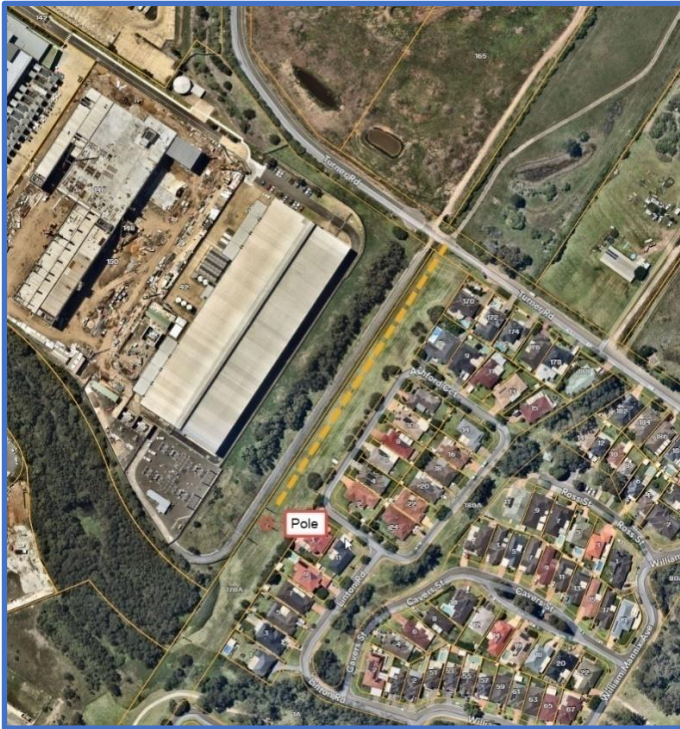


Figure 15: access to pole 1 via Turner Rd



Figure 16: Access to poles via Vannon Cct and Hartley Rd



Figure 17: Access through William Howe Regional Park

Periodic Inspection and Maintenance

Periodic line inspections, maintenance and repairs would be carried out as per Endeavour Energy’s standards and requirements. Inspection cycles are presented in the table below.

Inspection	Interval
Access track patrol (including inspection of network structures on access track)	2.5 years
Full overhead line inspection	5 years
Thermovision survey	4 years

Vegetation would be trimmed where necessary to maintain minimum vegetation clearances below overhead lines as per the table below.

Span length (m)	Clearance (m)
<= 50	3
50 - 100	4
100 - 200	5
200 - 600	6.5

Vegetation would be trimmed where necessary to maintain minimum “blowout” (horizontal) vegetation clearances around overhead lines as per the table below.

Span length (m)	Clearance (m)	
	First and Last 1/6th	Middle 2/3rds
<= 50	3	3
50 - 100	3	4
100 - 200	3.5	5
200 - 300	5.5	6.5
300 - 400	5	8.5
400 - 500	7	11
500 - 600	9.5	14

Vegetation would be trimmed where necessary to maintain a minimum 2 m radius clearance around poles.

6.2.2 The activity footprint (size of the area of impact)

The proposed works would span approximately 2.7 km of across two sections. Approximately 1 km of works would be conducted within William Howe Regional Park. The bulk of the works would be the replacement of conductors across the footprint. However, in addition to this 3 H poles, 1 3-pole structure, and 3 ground stays would be replaced. No crushed sandstone access tracks or hardstand areas would be required for the access of trucks or the operation of equipment. There would be minor ground disturbance of approximately 2 m² around each replacement pole and ground stay anchor. The disturbance would be caused by drilling into the soil to create new holes. The total area of ground disturbance is estimated to be approximately 24 m².

6.2.3 Proposed construction methods, materials and equipment

See Section 6.2.1.

Plant and equipment required includes:

- elevated work platforms (EWPs)
- borers
- concrete trucks
- excavators
- tipper trucks
- cable hauling equipment

6.2.4 Receiving, storage and on-site management for materials used in construction

New poles and conductor cable would be transported to work sites using trucks and extracted poles would be loaded onto these trucks with a truck-mounted crane for reuse or recycling. Holes would be drilled and filled within the same day. Spoil would be temporarily stored around each hole until used to

refill old holes and fill the top quarter of space around new poles. Sediment fences would be installed around the spoil, which would also be covered with a tarpaulin in very wet or windy weather. Any excess spoil would be transported to an appropriately licenced waste facility at the end of each day.

6.2.5 Earthworks or site clearing including extent of vegetation to be removed

The poles to be replaced are located on existing maintained easements approximately 30 m wide which are kept free of vegetation other than grass/low groundcover. As such, no vegetation removal is required, and only some grass cutting may necessary.



Figure 18: Ground surrounding Pole 3 to be replaced



Figure 19: Ground surrounding Pole 5 to be replaced



Figure 20: Ground surrounding Pole 13 to be replaced and new stays installed

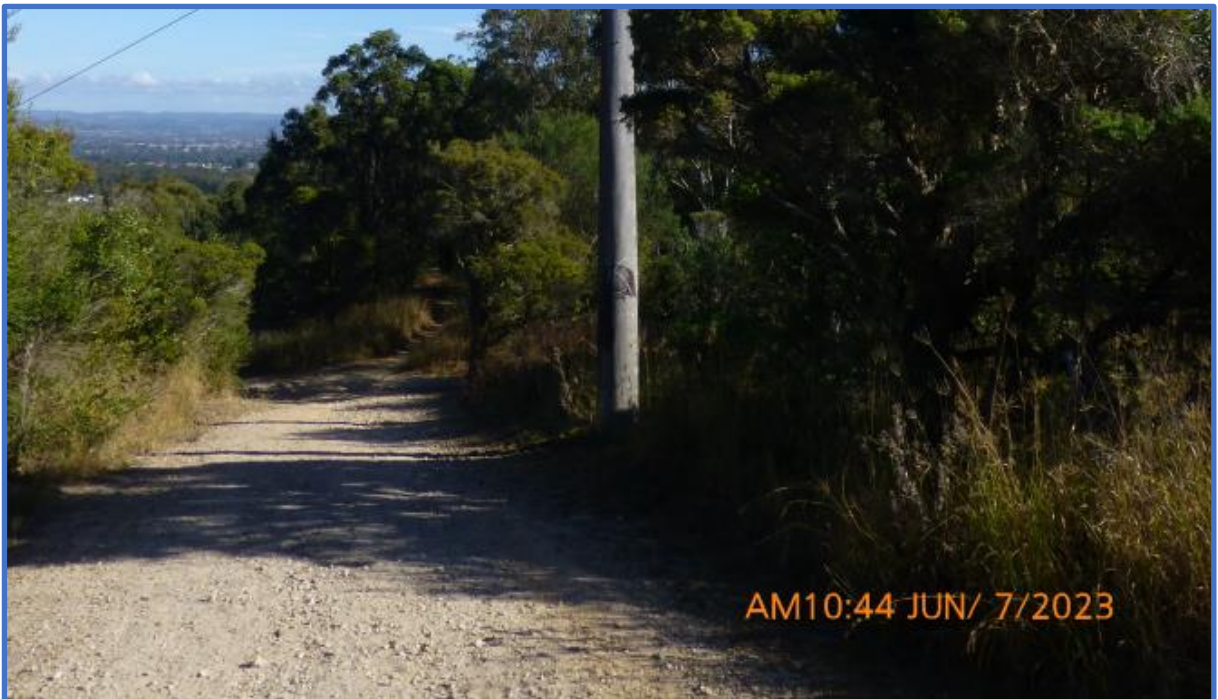


Figure 21: Ground surrounding Pole 15 to be replaced



Figure 22: Satellite image showing Pole 15, with markup indicating approximate proposed position of replacement poles

Care would be taken by construction personnel to avoid or minimise damage to the unsurfaced vehicle track within the park shown in Figures 21 and 22. Any damage caused to this track during the proposed works would be remediated. The park would not be accessed following 10 mm or more of rainfall in a 24-hour period, as per the Endeavour Energy Environmental Guidelines Handbook.

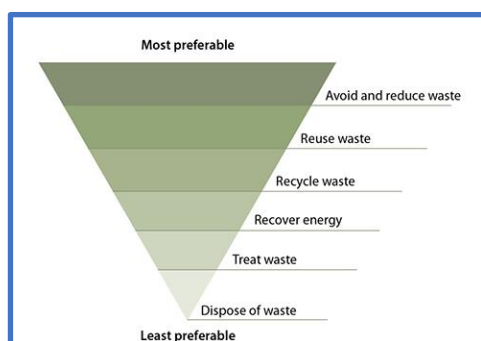
6.2.6 Environmental safeguards and mitigation measures

Refer to Section 9 for the list of environmental safeguards and the risks that they mitigate.

Sustainability measures – including choice of materials and water/energy efficiency

The following sustainability measures will be implemented during construction:

- The use of appropriately sized plant and equipment
- Ensuring all plant and equipment is maintained according to the manufacturer's specifications and in proper working order
- Adhering to the waste avoidance and reuse hierarchy



6.2.7 Construction timetable and staging and hours of operation

Works are expected to commence in May 2024, and would be conducted Monday to Friday over an estimated 20 days in blocks, over the course of 12 weeks. Conductor replacement over Narellan Road and along Main Street would be undertaken overnight (2 nights total) to minimise disruption of traffic and businesses. Other poles and conductors would be replaced during normal business hours (7 am – 6 pm). There would be multiple crews working on different sections of the alignment. The crews would be made up of approximately 12 people.

7. Reasons for the activity and consideration of alternatives

7.1 Objectives and reasons for the proposal

Three 132 kilovolt (kV) electricity transmission feeders, identified as 9L5, 9LY and 93Y, service Denham Court Transmission Substation (TS), Smeaton Grange Switching Station (SS), and South Leppington Zone Substation (ZS). There are ongoing residential redevelopments in the catchment areas of Denham Court TS and South Leppington ZS with load expected to exceed 50 megavolt-amperes (MVA). Additionally, there is a 180 MVA data centre application at Smeaton Grange SS. Denham Court TS also supplies a Sydney Trains site.

The 2022 summer demand peak load in the area was approximately 70 MVA, and the expected growth in this area is expected to exceed 225 MVA within 10 years and continue to increase for another 20 years. Feeder 9L5 is forecasted to be overloaded from Financial Year (FY) 2027 under normal operating conditions, Feeder 93Y will be unable to provide peak backup from FY26 and Feeder 9LY is unable to provide peak backup from FY35.

There is a need to increase capacity in the Nepean TS catchment area either by augmenting the existing infrastructure, or by installing a new Feeder, as existing feeders have insufficient capacity to meet this growing demand and are expected to reach over firm capacity by FY26.

The proposed works that are the subject of this REF are to upgrade the overhead sections of Feeder 9L5, as one of two components in the first stage of a 3-stage program of works to upgrade the capacity of the electricity distribution network in the Nepean area to enable it to meet the forecasted future electricity demands from the large data centre and residential development.

In addition to the conductor works a number of poles will need to be replaced with slightly taller poles due to low clearance violation.

7.2 Consideration of alternatives

A Case for Investment (CFI) was completed for Stage 1 of the program of works described above in April 2022. The CFI considered 3 credible options in addition to a “No proactive intervention” option for comparison. The assessment of these options is presented in the table below. The proposed works that are the subject of this REF are to augment the overhead sections of Feeder 9L5, highlighted in bold in the table below. “Augment” means to upgrade the capacity of the line.

Option	Description	Assessment
N/A	No proactive intervention	Not preferred as will lead to unacceptable risk or higher cost for customers if opportunity not captured. There is insufficient capacity on the Nepean Transmission Network to supply forecasted growth in Denham Court, Smeaton Grange, and South Leppington. There will be load at risk from FY26, and insufficient total capacity in the area by FY27.
1	Augment overhead sections of Feeders 9L5 and 93Y (Stage 1)	Preferred
2	Install a new Feeder from Nepean Transmission Substation to Smeaton Grange Switching Station	Not preferred as it is not as cost effective as Option 1 and has the same benefit. There is additional benefit to avoiding outages.

3	Augment Nepean Feeders 9L5, 9LY and 93Y all underground	Not preferred as it is the least cost-effective intervention option and has the same benefit as other options.
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7.3 Justification for preferred option

Option 1, “Augment Feeders 9L5 and 93Y (Stage 1)”, in the above table was the preferred option, as it had the highest Net Present Value and would allow for future large connections and their associated revenue.

7.4 Site suitability

The works would be conducted within the current easement, which has already been disturbed and much of the required infrastructure present. By retaining the electricity feeder in its current location this reduces the potential impact associated with constructing new easements, and associated access tracks.

8. Description of the existing environment

8.1 Overview of the project area

Section 1

Section 1 of the proposed works is approximately 1.6km in length. It starts next to Don Bradman Substation in Smeaton Grange (Smeaton Grange Switching Station), continues along an easement between Coles Distribution Centre and housing on Chapman Circuit and Downes Crescent, and the rear of residential blocks on Patrick Place. Section 1 continues between Narellan Zone Substation and Hartley Road, over Camden Hire Access & Dump Truck Division's parking lot, parallel to the west side of Hartley Road, across Narellan Road, over Main Street, Mount Annan, before finishing between Mount Annan Hotel's parking lot and the side of Main Street see figures below.

Poles 1 and 2 are accessible via an access road alongside Don Bradman Substation in Smeaton Grange. Pole 2 is located approximately 20 m northeast of Kenny Creek. The ground from Pole 2 slopes down into Kenny Creek. Poles 3 and 4 are accessible via Chapman Circuit or Downes Crescent and a public reserve running parallel to parts of these roads. Poles 5, 6, 7 and 8 are accessible via Waterworth Drive. Pole 5 is located approximately 65 m from Annan Creek. The ground is flat near the pole but drops steeply at the creek head 65 m to the southwest. Narellan Creek is approximately 100 m southwest of Pole 8 and 65 m northeast of Pole 9. Poles 9, 10 and 11 are accessible via Main Street, Mount Annan. Ground near residences in Section 1 is slightly sloped to the southeast, towards the residences. There are many stormwater drains on Hartley Road and Main Street.

Section 2

Section 2 of the proposed works starts at the western edge of the north-easternmost point of William Howe Regional Park, behind 20 Edward Howe Place, Narellan Vale, before travelling in a straight line through William Howe Regional Park. The lines cross a trail in the park, and a section of poles stands in the middle of a trail. The lines cross a body of water in the park before finishing on the northern side of Liz Kernohan Drive (nearest street Cassidy Street in Spring Farm) see figures below.

Poles would be accessed via the access road off Liz Kernohan Drive. Once inside William Howe Regional Park (via the access road), existing trails/access roads within the park would be used to access Poles 11 to 16. From Pole 12 to 14, the ground is slightly sloped to the southwest, towards residences. Pole 16 stands 17 m from an unnamed body of water in William Howe Regional Park near Liz Kernohan Drive. Most vegetation around the poles to be replaced is grass.

Surrounding land use is mainly William Howe Regional Park, operated by NSW National Parks and Wildlife Service. William Howe Regional Park contains walking trails, forest and an unnamed body of water (lake, pond or similar). There are also bordering residential properties to the northwest, near Poles 12 to 14. There are 11 residences on Ephraim Howe Place, Payton Circuit and Edward Howe Place with rear fences that are 12 to 23 m from poles and lines, and with houses that are 15 to 21 m from poles and lines. Additionally, there are 4 residences on Mary Howe Place with front yards that are 74 to 100 m from poles and lines, and with houses that are 58 to 101 m from poles and lines.

Vegetation stands from approximately 10 m southeast of poles 12 to 14. Pole 15 stands 1 to 2 m from forest to the southeast with lines traversing over a section of vegetation.

The land zoning in the vicinity of the proposed works is shown in the figures below, indicating current land uses. Poles 13 and 15 are located within land zoned C1: National Parks and Reserves. Pole 3 is located within land zoned R2: Low Density Residential, while Pole 5 is located within land zoned E4: General Industrial.

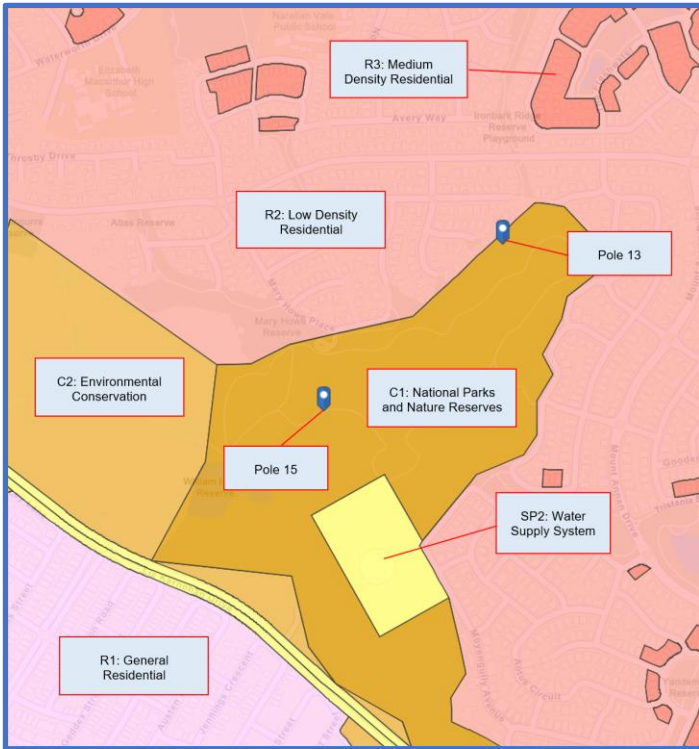


Figure 23: Land use zones in the vicinity of the proposal Section 2



Figure 24: Satellite image of vicinity of Section 2 of proposed works

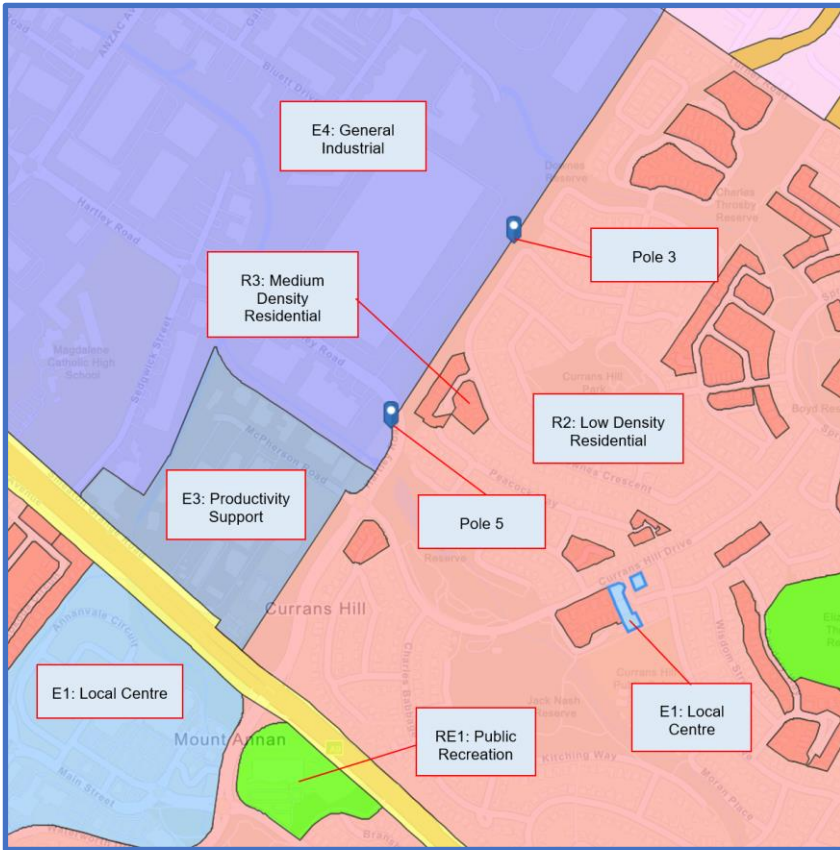


Figure 25: Land use zones in the vicinity of the proposal Section 1



Figure 26: Satellite image of vicinity of Section 1 of proposed works

8.2 Natural values

8.2.1 Geology, geomorphology and topography

The area in the vicinity of the proposed works features three geological classifications:

- **Triassic sedimentary rocks:** Quartz-lithic to quartz-rich sandstone with conglomerate, mudstone and siltstone. Deposited in high energy braided river systems.
- **Quaternary alluvial deposits:** Current and recent mud, silt, sand and gravel deposited by river (alluvial) systems.
- **Cenozoic undifferentiated sediments/sedimentary rocks:** Unconsolidated mud, silt, sand and gravel of an uncertain age and origin.

Poles 3, 5, 13 and 15 (to be replaced) are all located within areas of Triassic sedimentary rocks.

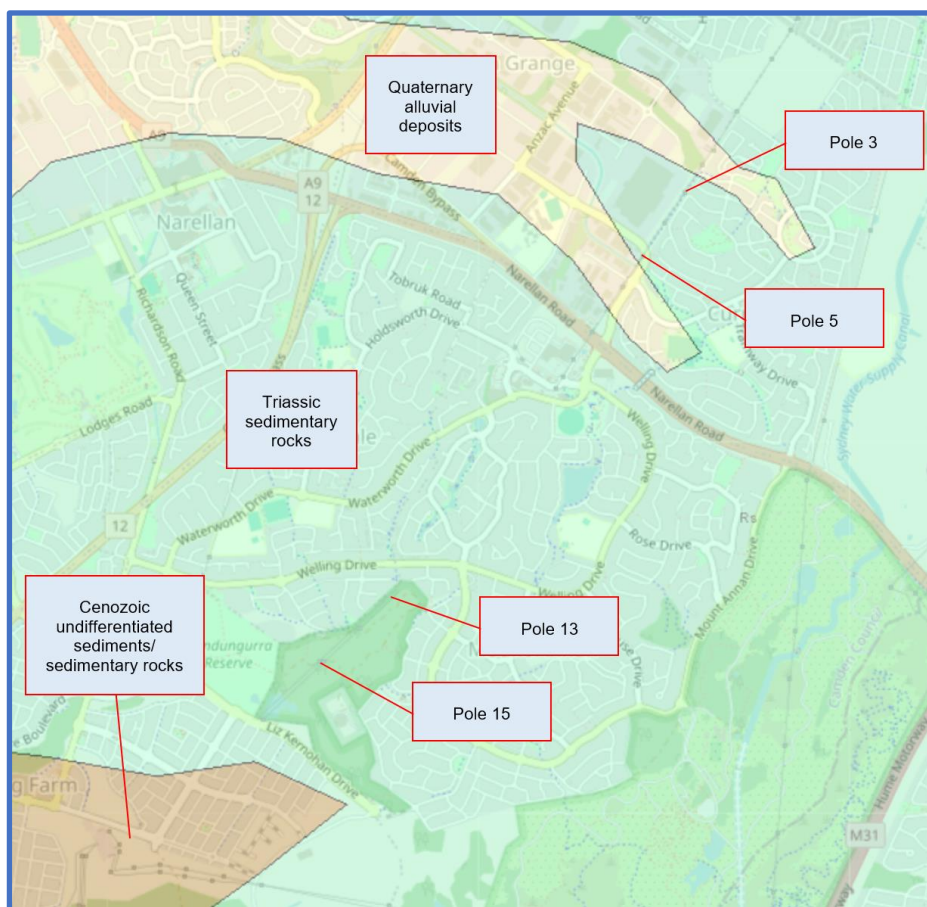


Figure 27: Simplified Surface Geology in the vicinity of the proposed works

8.2.2 Soil types and properties (including contamination)

A Search of the NSW EPA Contaminated lands database on 12 March 2024 did not identify any contaminated sites in Narellan, Smeaton Grange or the Camden Council LGA.

A search of the NSW Planning Portal conducted on 12 March 2024 did not identify any acid sulphate soils or salinity in the vicinity of the proposal refer to Figure below.

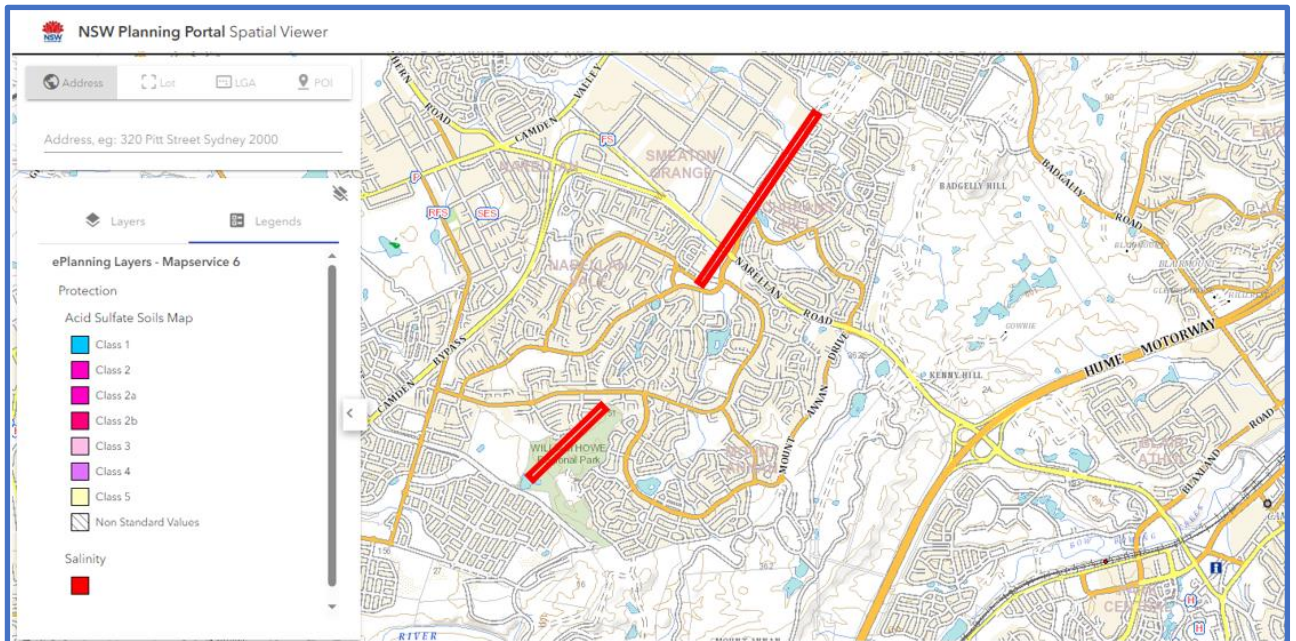


Figure 28: ASS, PASS and salinity map

Pole 3 is located in an area of Kurosols, while Pole 5 is located on the boundary between an area of Kurosols and an area of Sodosols. Pole 13 is located in an area of Kurosols near the boundary with an area of Dermosols within which Pole 15 is located, refer to figure below. The Australian Soil Classification describes these soil types as follows:

Kurosols

“Soils with strong texture contrast between A horizons and strongly acid B horizons. Many of these soils have some unusual subsoil chemical features (high magnesium, sodium and aluminium).”

Sodosols

“Soils with strong texture contrast between A horizons and sodic B horizons which are not strongly acid. Australia is noteworthy for the extent and diversity of sodic soils.”

Dermosols

“Soils with structured B2 horizons and lacking a strong texture-contrast between the A and B horizons. Although there is some diversity within the order, it brings together a range of soils with some important properties in common.”

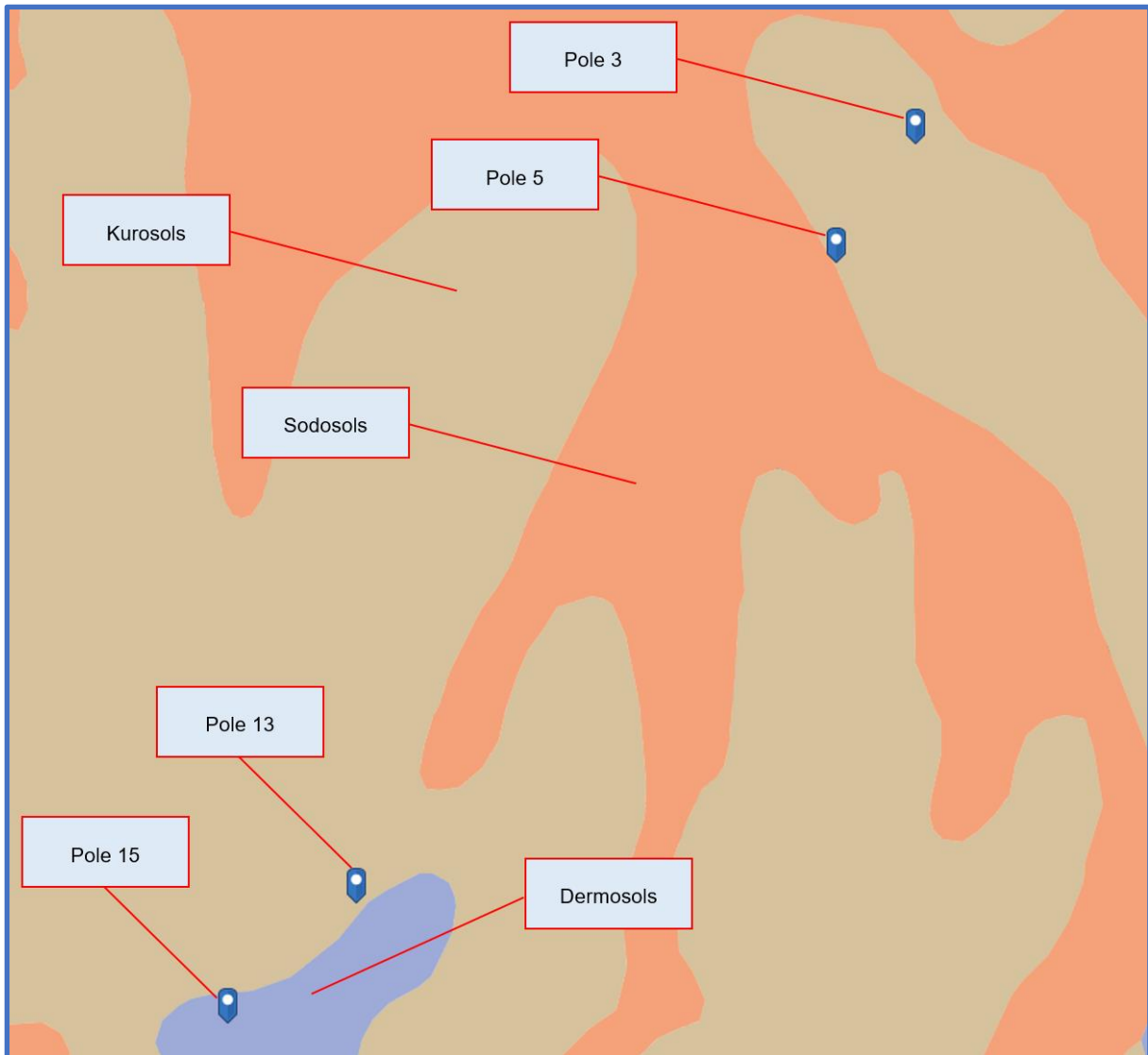


Figure 29: Soil type map

It should be noted that the proposal does not include large areas of disturbed soil

8.2.3 Watercourses, waterbodies and their catchments

The proposal would intersect a number of first and second order watercourses, including; Narellan Creek, Annan Creek, and Kenny Creek. Works to replace Pole 3 would occur approximately 140 m to the southwest of Kenny Creek. Works to replace Pole 5 would occur approximately 80 m to the northeast of Annan Creek.

All of these water bodies are within the Nepean River catchment refer to figures below.

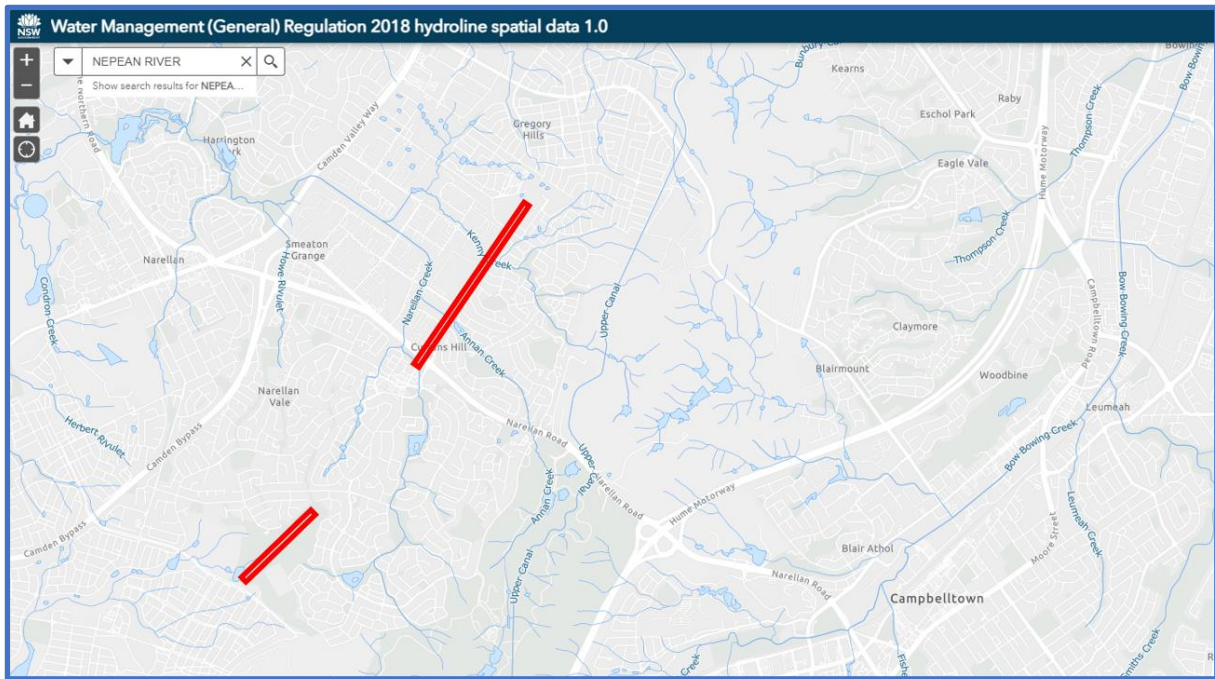


Figure 30: Water bodies in the locality of the proposal

The Nepean River has a 'Fair' freshwater fish community status and is considered key fish habitat refer to the figure below. Platypus (*Ornithorhynchus anatinus*) are also found in the River in this location (personal communication: Lyndal Kaye, NPWS Ranger, April 2024). Given the scale and scope of the proposed works it is unlikely that they would impact the habitat quality of the Nepean River for fish and platypus.

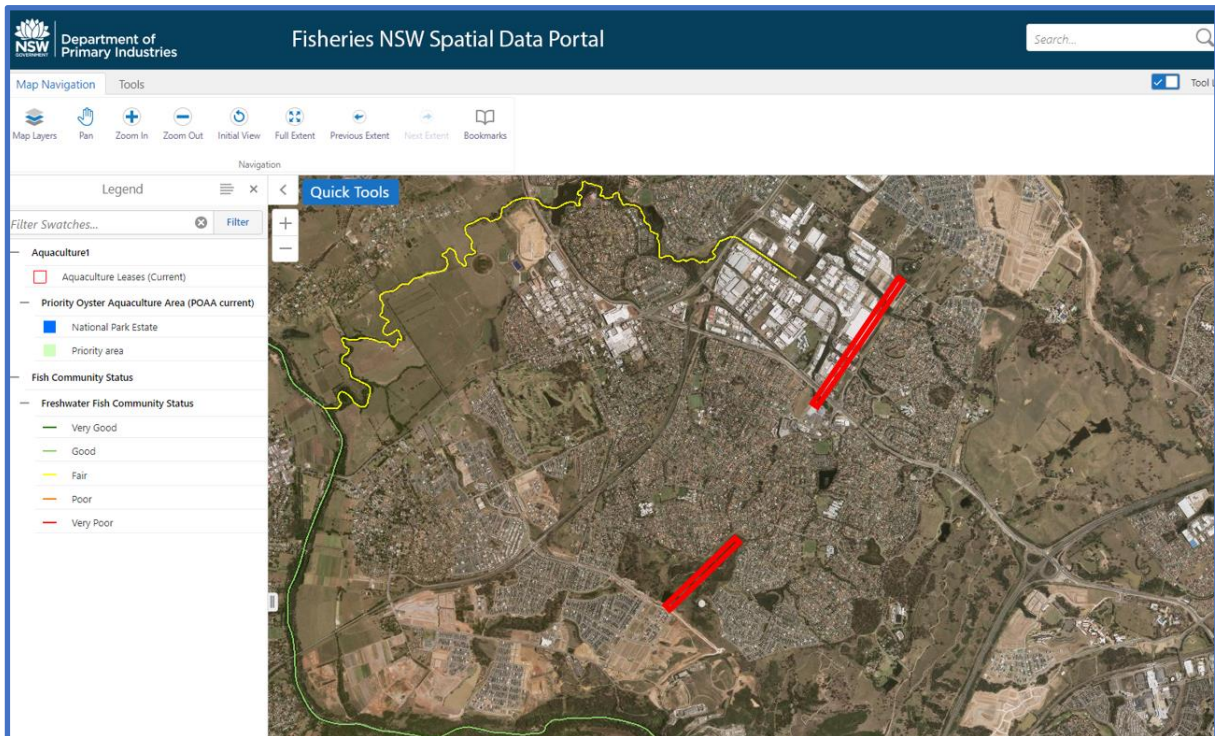


Figure 31: Fish community status of surrounding waterways

8.2.4 Coasts and estuaries

8.2.5 The proposed works would not impact any coastal areas or estuaries. Biodiversity

Overview of terrestrial and aquatic biodiversity

The predominant Plant Community Type (PCT) in William Howe Regional Park is PCT 3319: Cumberland Shale Hills Woodland. This is described in the BioNet Vegetation Classification as:

A tall to very tall sclerophyll woodland to open forest with a mid-stratum of soft-leaved shrubs and small trees with a grassy ground cover that is extensive on rises and upper slopes of hills south from Cecil Hills, in the south-western part of the Cumberland Plain to the west of Sydney. It is most extensive in Campbelltown, Camden and Wollondilly local government areas. The canopy commonly includes *Eucalyptus moluccana* and *Eucalyptus tereticornis*, with a sparse shrub to small tree layer which very frequently includes *Bursaria spinosa* and at least one species of *Acacia*, of which *Acacia implexa* is most frequent. The presence of *Acacia implexa* helps distinguish this PCT from PCT 3320, which has a similar assemblage and structure. The mid-dense ground layer typically includes forbs, grasses and twiners. *Dichondra repens* is almost always present and *Microlaena stipoides*, *Desmodium varians*, *Brunoniella australis* and *Aristida ramosa* are very frequent. This PCT typically occurs in a warm, moist climate between 90-300 metres asl. It has been heavily cleared and now occurs in small remnants with varying levels of disturbance within a rural landscape. The canopy in these remnants often comprises immature cohorts of trees that have regenerated after thinning or clearing. The distribution of this PCT overlaps with PCT 3320 between Cecil Hills and the Nepean River, in which area of overlap PCT 3319 typically occurs on higher elevation hills and ridges. This PCT grades into PCT 3318 on lower protected slopes in the more dissected hills around Cecil Hills and the Razorback Range, and into PCT 3321 near the interface with the sandstone plateaus on the edge of the Cumberland Plain. PCT 3318 includes shrubs, ferns and vines typical of sheltered habitats that are rare in this PCT. Ironbark eucalypts are very frequent and *Eucalyptus punctata* is common in the canopy of PCT 3321, and *Eucalyptus moluccana* and *Eucalyptus tereticornis* are both rare.



Figure 32: Map showing proximity of Poles 13 and 15 (to be replaced) to Plant Community Type 3319: Cumberland Shale Hills Woodland

The closest PCT to Pole 3 is some small areas of PCT 4025: Cumberland Red Gum Riverflat Forest, located approximately 160 m to the north-northeast in Downes Reserve. The closest PCT to Pole 5 is also PCT 4025: Cumberland Red Gum Riverflat Forest, located approximately 310 m to the west-northwest. This PCT is described in the BioNet Vegetation Classification as:

A tall to extremely tall sclerophyll open forest with a mid-stratum of soft-leaved shrubs and small trees and dense, grassy ground layer situated on the alluvial flats alongside streams that drain the Cumberland Plain or more rarely the broad alluvial flats of the Hawkesbury and Nepean river systems to the west of Sydney. The canopy almost always includes red gums (*Eucalyptus tereticornis*, *Eucalyptus amplifolia*), occasionally associated with an apple (*Angophora floribunda*, *Angophora subvelutina*), which may be locally prominent. A sparse mid-stratum almost always includes *Bursaria spinosa* and one or more *Acacia* species, of which *Acacia parramattensis* is the most frequent and abundant. The ground layer is typically characterised by a dense cover of grasses along with soft-leaved forbs and ferns. A high cover of *Microlaena stipoides* is almost always present with more scattered *Dichondra repens*, *Oplismenus aemulus* and *Solanum prinophyllum* being very frequent. The largest remaining areas are situated along the smaller streams and, while widespread, this PCT primarily occurs in small, often disturbed patches and is threatened by ongoing weed invasion following flood events. It typically occurs in a warm, moist climate at low elevation with a mean of 60 metres asl, however may occur up to 320 metres in southern parts of the Cumberland Plain. Where saline soils occur on the floodplain, this PCT grades into PCT 4023 which includes *Casuarina glauca* in its canopy. Where the floodplain narrows in valleys with sandstone escarpments upslope, it grades into PCT 4058 which includes a wider range of shrubs and scramblers including *Sigesbeckia orientalis* subsp. *orientalis*, *Breynia oblongifolia* and *Rubus parvifolius*. As elevation or distance from the margin of the floodplain increases, this PCT grades into grassy woodlands of the Cumberland Plain (PCT 3320) in which *Eucalyptus moluccana* is common.

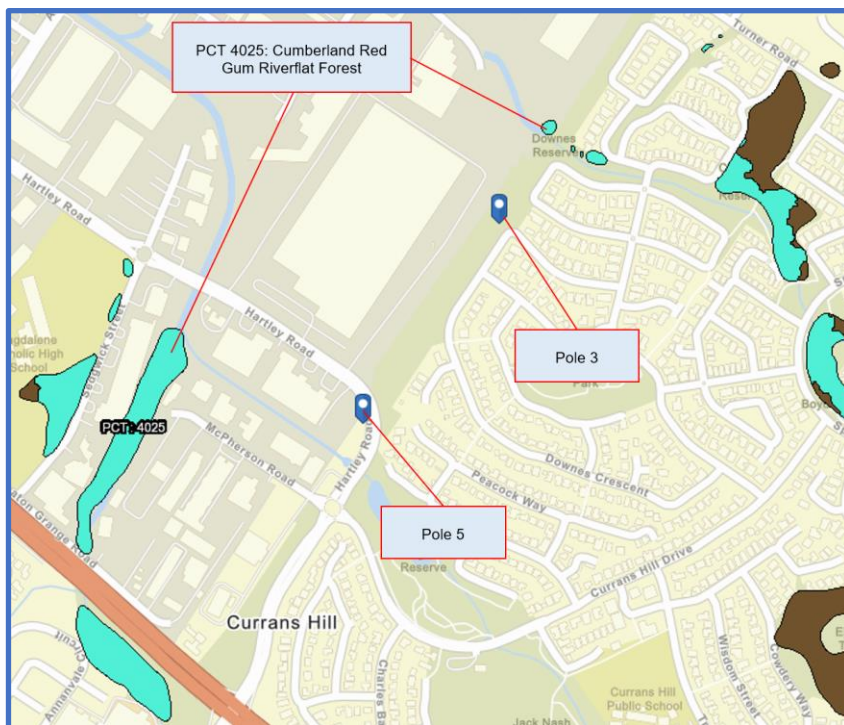


Figure 33: Map showing proximity of Poles 3 and 5 (to be replaced) to Plant Community Type 4025: Cumberland Red Gum Riverflat Forest

As the proposed works would be conducted within a mapped area of Cumberland Plain Woodland an ecologist was engaged to inspect the area of Cumberland Plain Woodland within the proposed works area, and considering the scope of works, determine if the proposed works would have a significant effect on the vegetation community. The conclusion of the report states that a significant impact is not likely, and a Species Impact Statement or Biodiversity Development Assessment Report is not required. The ecologist’s report is contained within Appendix A.

Areas of outstanding biodiversity value or critical habitat

A Search of the NSW Planning Portal on 12 March 2024 shows that the portion of the proposed works that is within the William Howe Nature Reserve is also within an area of mapped Biodiversity Values refer to the figure below.

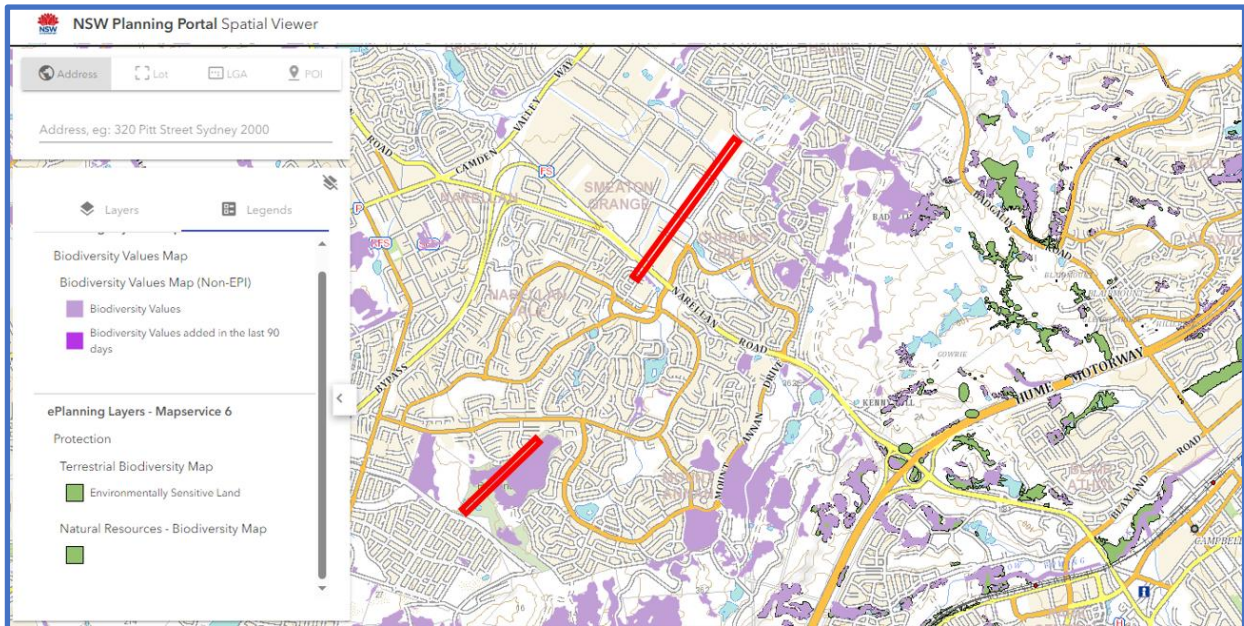


Figure 34: Areas of mapped biodiversity value in the vicinity of the proposal

As detailed above, this area has been inspected by an ecologist who has assessed the works as not having a significant impact on the biodiversity of the area (refer to Appendix A).

The works would not trigger requirements under the Fisheries Management Act. Environmental assets of intergenerational significance (AIS)

A search of the NSW NPWS AIS online portal on 11 March 2024 did not identify any Assets of Intergenerational Significance in the vicinity of the Proposed works.

Threatened ecological communities

An ecological assessment was undertaken on 23 November 2022 and included targeted surveys for threatened flora identified in the PMST search. The survey did not detect any of the identified species and concluded they were unlikely to occur given the disturbed nature of the habitat.

An Assessment of Significance under the BC Act was undertaken by Gingra Ecological Surveys in relation to Cumberland Plain Woodland “given the alignment supports native plants which are characteristic of the Cumberland Plain Woodland CEEC but no individual species of threatened flora or fauna”.

The ecological assessment concluded:

- the proposed activity is within a highly disturbed area of vegetation;
- the alignment and access track have been cleared and the activity will impact on a highly disturbed area of up to 75m²;

- a significant impact is not likely, and a Species Impact Statement or Biodiversity Development Assessment Report is not required; and
- there is not likely to be a significant effect on Matters of National Environmental Significance, including EPBC listed flora and fauna.

The map from the SEED database below shows that Pole 13 (proposed to be replaced) is outside the boundaries of the Cumberland Plain Woodland Threatened Ecological Community as the easement has been cleared of vegetation.



Figure 35: Map from SEED Database showing proximity of Poles 13 and 15 (to be replaced) to Cumberland Plain Woodland Threatened Ecological Community

Pole 15 is within the boundaries of the Threatened Ecological Community, but is immediately adjacent to an unpaved access road, and the individual replacement poles would be installed at approximately the same distance from the edge of this road as the existing poles and within 1.5 to 2 m of them. There is no vegetation in the proposed positions of the replacement poles other than grasses. There is vegetation within approximately 1 to 2 meters of the locations of the existing poles and the proposed replacement poles. Trimming of the vegetation within a 2 m radius of the replacement poles may be required.



Figure 36: Satellite image showing Pole 15 with markup indicating approximate proposed position of replacement poles

In Section 1 of the proposed works, the nearest Threatened Ecological Community is River-Flat Eucalypt Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions, located approximately 145 m to the northeast of Pole 3.

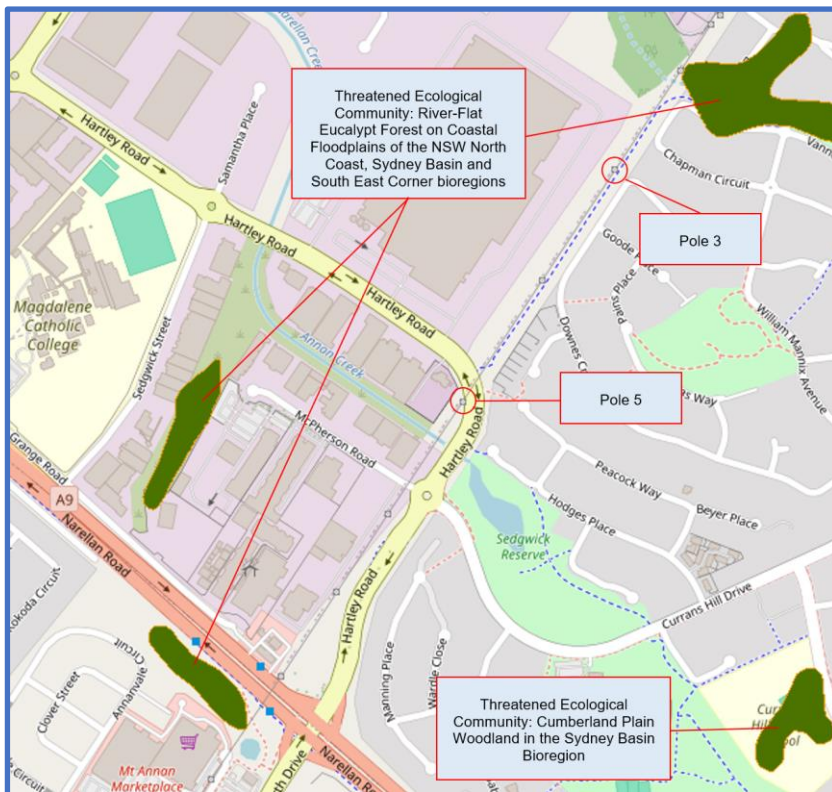


Figure 37: Map from SEED Database showing proximity of Poles 3 and 5 (to be replaced) to Threatened Ecological Communities

Threatened species and populations

Two vulnerable fauna species, Grey-headed Flying-fox, *Pteropus poliocephalus*, and Eastern Coastal Free-Tailed Bat, *Micronomus norfolkensis*, have been recorded in William Howe Regional Park.



Figure 38: Map showing location of where vulnerable fauna species were recorded in relation to Poles 13 and 15

Two vulnerable fauna species, Large Bent-winged Bat, *Miniopterus orianae oceanensis*, and Southern Myotis, *Myotis macropus*, have been recorded in the area of Narellan Road between Mount Annan and Currans Hill

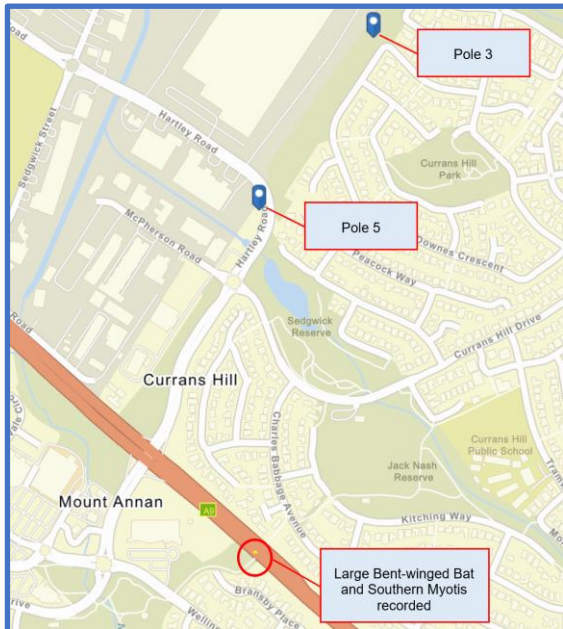


Figure 39: Map showing location of where vulnerable fauna species were recorded in relation to Poles 3 and 5

Lyndal Kaye, NPWS Ranger, Cumberland Area, stated in an email on 23 February 2024 that there is a small population of Eastern Grey Kangaroos in William Howe Regional Park, along with echidnas, possums, bats and birdlife.

8.3 Cultural values

8.3.1 Aboriginal cultural heritage

The William Howe Regional Park Plan of Management (NPWS October 2015) states:

The region in which William Howe Regional Park is situated has a long history of Aboriginal occupation. Groups were drawn to the area because of its proximity to the Nepean River and the plentiful supply of food and water (Camden Council 2010).

The park is situated within the boundaries of the Tharawal Local Aboriginal Land Council and within the area originally occupied by the Dharawal People. The Dharawal clans, including the Cubbitch Barta, the coastal Gweagal and the Wodi-Wodi of the Illawarra, travelled through and used the rich resources of this landscape (Dallas & Corby 2005).

According to some Aboriginal descendants, the most elevated parts of William Howe Regional Park were used as lookouts, for communication and for large gatherings. Turkeys Nest Dam was previously a soak fed by groundwater and was probably used as a water supply and to source food such as ducks and frogs.

There are no identified Aboriginal cultural heritage sites within or adjacent to the areas of proposed works. The nearest identified Aboriginal cultural heritage sites are located at least 600 m to the east of Pole 3 (to be replaced), and least 205 m to the south-southwest of Pole 15 (to be replaced). As such, the proposed works would have no impact on Aboriginal cultural heritage.



Figure 40: Map showing proximity of Poles 13 and 15 (to be replaced) to nearest identified Aboriginal cultural heritage sites

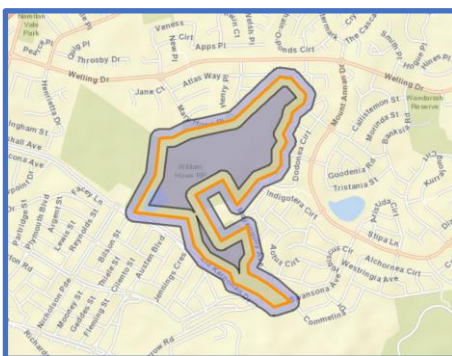


Figure 41: AHIMS search result for area around Poles 13 and 15 showing no identified Aboriginal heritage items. Searched 1 March 2024.

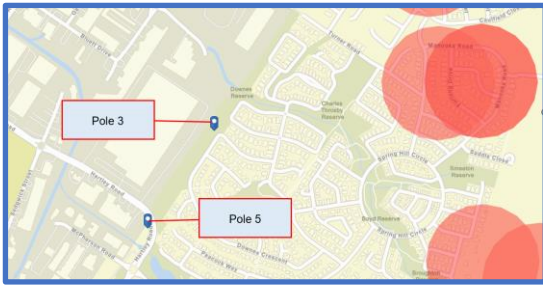


Figure 42: Map showing proximity of Poles 3 and 5 (to be replaced) to nearest identified Aboriginal cultural heritage sites



Figure 43: AHIMS search result for area around Pole 3 showing no identified Aboriginal heritage items. Searched 1 March 2024.

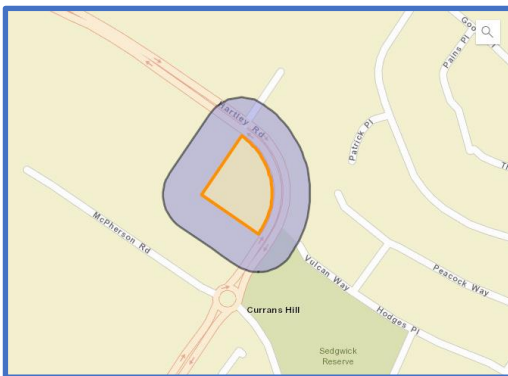


Figure 44: AHIMS search result for area around Pole 5 showing no identified Aboriginal heritage items. Searched 1 March 2024.

If, during the course of the activity:

- any Aboriginal objects, as defined under the NPW Act, are uncovered or discovered; and/or
- any relics, as defined under the NSW *Heritage Act 1977*, are uncovered or discovered,

then works would immediately cease and the NPWS would be notified, unless the objects and/or relics are subject to a valid Aboriginal Heritage Impact Permit or Heritage Permit. Work would not recommence until advice to do so has been provided by NPWS.

8.3.2 Historic heritage values

There are no items of historic heritage listed on the State Heritage Register or Camden Local Environment Plan within or adjacent to the areas of proposed works. The nearest historic heritage

item to the proposed works is Smeaton Grange, listed on the Camden Local Environmental Plan 2010 as item I140, located approximately 450 metres to the west of Pole 5.

The Statement of Significance for the property is quoted below:

The main homestead, former cottage and stables, original and reconstructed landscape setting are exceptional items of local significance to the Camden and Campbelltown districts. They are tangible, high-quality evidence of the historical growth and development of important late Victorian pastoral properties of the district and its historical associations with influential historical figures such as William Hilton Hovell and the Fitzpatrick and Sedgwick families.

The proposed works would have no impact on this property.

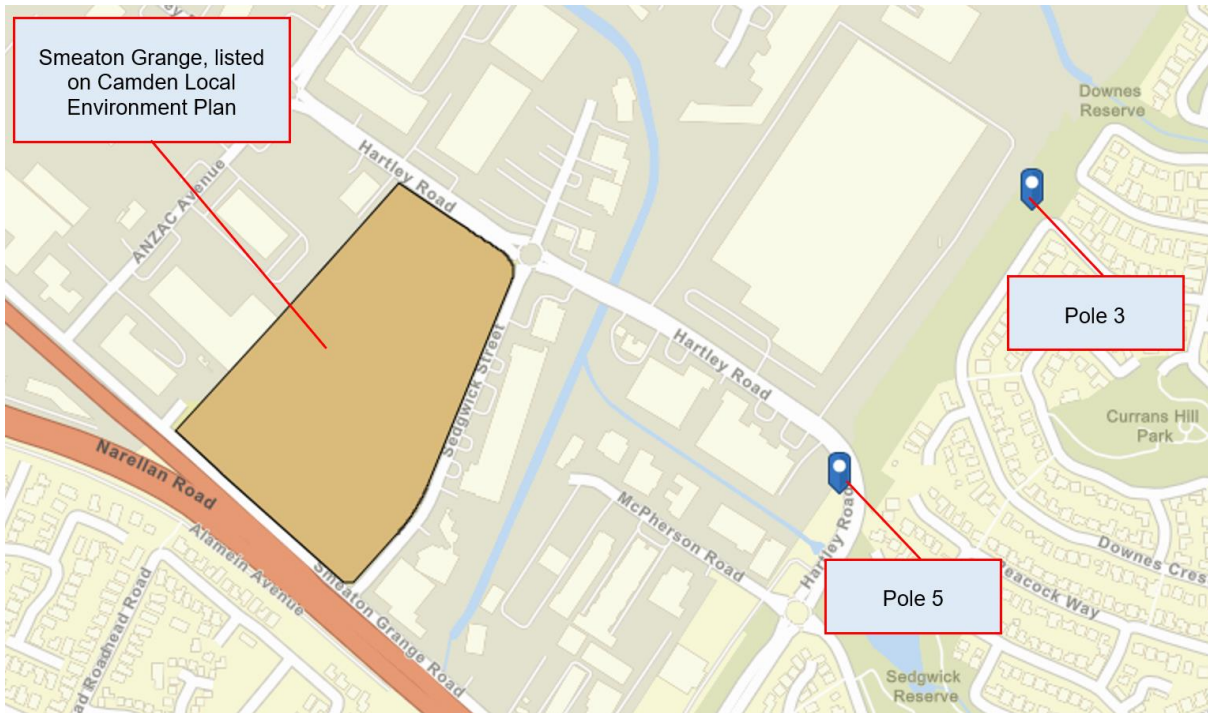


Figure 45: Map showing Smeaton Grange, a historic heritage item listed on the Camden Local Environment Plan

8.4 Social values

8.4.1 Recreation values

The William Howe Regional Park Plan of Management (NPWS October 2015) states:

The park provides informal recreation opportunities in a growing urban area including a lookout for view appreciation, picnic facilities, walking and cycling tracks, and places for on-leash dog walking.

8.4.2 Scenic and visually significant areas

The William Howe Regional Park Plan of Management (NPWS October 2015) states:

The park has high scenic value. The prominent hills within the park — which include the second highest point in the Camden Local Government Area — are largely vegetated and visible from the surrounding area.

From the Turkeys Nest Lookout (the main attraction of the park) visitors have unobstructed panoramic views to the Razorback Range, the Blue Mountains, the Nepean River and prominent surrounding peaks.

8.4.3 Education and scientific values

The William Howe Regional Park Plan of Management (NPWS October 2015) states:

Biological values

The park is part of an important wildlife corridor that links to the Nepean River, nearby reserves and other vegetation through Narellan, Mount Annan and Spring Farm.

It provides a range of habitats for native plants and animals, including a small pocket of critically endangered Cumberland Plain Woodland, native grasses and two dams.

Native animals recorded from the park include at least two bat species listed as vulnerable under the NSW Threatened Species Conservation Act 1995 (TSC Act).

Aboriginal heritage values

The park is within the traditional lands of the Dharawal People who continue to value their association with their Country.

The elevated areas of the park, with their commanding views over the region, were important for communication, large gatherings and spotting animals.

Turkeys Nest Dam at the lookout was originally a soak used as a source of water and food for Aboriginal people.

Historic heritage values

The park formed part of the original lands granted to William Howe in 1818. It retains relics from past farming practices including the spring-fed Turkeys Nest Dam located close to the highest point of the park.

Together with Gundungurra Reserve, the park's grassland areas form a cultural landscape of the European colonial period. This landscape is becoming increasingly rare in the Cumberland Plain due to urban development.

8.4.4 Interests of external stakeholders

The proposed works seeks to secure the electricity distribution supply in the Camden area. The interests of the electricity consumers within the Camden area are served by the objectives of this proposal.

8.5 Matters of national environmental significance

A search of the Commonwealth Protected Matters Search Tool (PMST) was undertaken on 16 February 2024, approximately 10km in each direction from the length of section 1 and section 2. The search results indicate there are no World Heritage Properties, Commonwealth Heritage Places or National Heritage Places in the vicinity of the proposed work sites.

9. Impact assessment during all stages of the activity

Following approval of this document and prior to the commencement of construction the sub-contractor conducting the proposed works must develop a Construction Environmental Management Plan (CEMP), in accordance with Section 4.5.3, of EMS 001_Issues am8 - Environmental Impact Assessment and Environmental Management Plans. The CEMP will detail how the process and conditions detailed in the Decision Statement will be applied.

9.1 Physical and chemical impacts

Is the proposed activity likely to...	Applicable?	Impact level (negligible; or low, medium or high adverse; or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
1. impact on soil quality or land stability?	Yes	Negligible	A total of 12 holes would be drilled with a borer, with a diameter of 750 mm and to a depth of 2.3 to 2.5 m, to replace 3 H poles, 1 3-pole structure and 3 ground stays. The existing poles and ground stays would be removed, and the holes left would be filled with spoil from the nearest new hole. Ready mix concrete would be poured into the holes around the replacement poles and ground stays to about ¾ the depth of the hole, and spoil would be used to fill the remainder. Trucks would access the work sites to transport equipment and materials. Ground disturbance is estimated to be approximately 2 m ² around each hole, for a total area of approximately 24m ² .	<ul style="list-style-type: none"> • Spoil from the same hole would be used to fill in the remaining space around the poles and ground stays after pouring in the concrete and would be compacted to be level with the surrounding ground surface. • Spoil from the nearest new hole would be used to fill in the holes left by the extracted poles and ground stays and would be compacted to be level with the surrounding ground surface. • Any remaining spoil would be removed from site at the end of the shift and disposed of at an appropriately licenced waste facility. • Trucks would access the work sites along public roads, access roads and regularly maintained easements.
2. affect a waterbody, watercourse, wetland or natural drainage system – either physically or chemically (e.g. due	Yes	Negligible	See (1.) above.	Work sites would be managed to prevent sediment, oils, fuels and chemicals from leaving the work site and entering waterways according to the “Erosion and Sediment Control” and “Oil and Chemical Management” sections of Endeavour Energy’s Environmental Guidelines Handbook. Measures would include:

Is the proposed activity likely to...	Applicable?	Impact level (negligible; or low, medium or high adverse; or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
to runoff or pollution)?				<ul style="list-style-type: none"> • Using a tarpaulin to cover spoil stockpiles in very wet or windy weather • Installing woven sediment fences around spoil stockpiles if required • Vehicles using existing formed access tracks wherever possible • Taking care with both vehicular access and construction works to minimise disturbance to soils • Not utilising access tracks within William Howe Regional Park following heavy rainfall (greater than 10 mm rainfall in a 24-hour period to 9am). Any damage to access tracks in the Park would be reported appropriately. • Regularly inspecting and maintaining all vehicle, plant and equipment with hydraulic oil • Having spill kits available on vehicles
3. change flood or tidal regimes, or be affected by flooding?	No			
4. affect or be affected by coastal processes and coastal hazards, including those under climate change projections (e.g. sea level rise)?	No			
5. involve the use, storage or transport of hazardous substances, or use	No			

Is the proposed activity likely to...	Applicable?	Impact level (negligible; or low, medium or high adverse; or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
or generate chemicals which may build up residues in the environment?				
6. involve the generation or disposal of gaseous, liquid or solid wastes or emissions?	No			
7. involve the emission of dust, odours, noise, vibration or radiation?	Yes	Negligible	<p>Noise would be generated by the machinery used to complete the works, which would include elevated work platforms, borers, concrete trucks, excavators, tipper trucks and cable hauling equipment. This machinery would be used in the transportation of materials and equipment to and from site, drilling of holes, removal and installation of poles and stays, and feeding of new conductor cable through poles. Drilling holes for new poles would be the noisiest activity, which takes approximately 2 hours per pole. Conductor replacement over Narellan Road and in commercial areas (Poles 8-11 in Figure 1A and 1B) to be conducted at night for minimal disruption.</p>	<p>Residents and businesses close enough to the work sites to be deemed likely to be affected by noise would be notified in writing 5 to 14 days prior to the commencement of construction works. Notification would include:</p> <ul style="list-style-type: none"> • proposed commencement date; • brief scope of works; • anticipated duration of the works; • 24-hour contact details of the project manager or other appropriate contact person in the event of any complaints; and • details on proposed blocking or impairing access to driveways and/or residences/businesses (if any). <p>Noise from the works would be managed in accordance with the “Noise and Working Hours” section of Endeavour Energy’s Environmental Guidelines Handbook. Where feasible and reasonable, measures to minimise noise on adjacent homes and businesses may include, as appropriate:</p> <ul style="list-style-type: none"> • Notifying residents likely to be affected by work outside normal working hours (Monday to

Is the proposed activity likely to...	Applicable?	Impact level (negligible; or low, medium or high adverse; or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
				<p>Friday 7am to 6pm, Saturday 8am to 1pm) 5-14 days prior to commencement of works.</p> <ul style="list-style-type: none"> • Considering the use of silenced equipment, installation of noise dampening measures and temporary noise shielding barriers around stationary plant (such as generators and lighting), subject to manufacturers' design requirements. • Turning off equipment when not being used. • Avoiding dropping materials from a height or dragging equipment. • Avoiding the use of radios or stereos outdoors and limiting loud talking and shouting. • Identifying and using quieter construction methods, vehicles, plant and equipment for the works. • Regularly maintaining plant and equipment to minimise unnecessary noise (e.g. rattling). • Scheduling the noisiest work to be undertaken during recommended standard normal working hours. Where this is not possible, complete the noisiest work during hours that would be less interruptive to sensitive receptors (e.g. before 10pm). • Scheduling respite periods if the works are likely to generate noise over extended periods in the same area. • Considering scheduling works to avoid impacting the same receptors for more than two nights during any single week, and consecutive nights of works where possible.

Is the proposed activity likely to...	Applicable?	Impact level (negligible; or low, medium or high adverse; or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
				<ul style="list-style-type: none"> • Where practicable, scheduling the noisiest work to move progressively away from sensitive receptors during a single night of work and the overall program of work during any single week. • Arranging the worksite to minimise the activation of audible reversing and movement alarms, and to take advantage of obstructions that may act as noise barriers. • Selecting access roads to the work site as far away as possible from sensitive receptors and loading and unloading equipment as far away as possible from sensitive receptors. • Considering the location and orientation of plant and equipment that generates high, impulsive, low-frequency and/or tonal noise so as to minimise impacts on sensitive receptors. • Avoiding the simultaneous operation of two or more noisy plant or equipment close together. • Not using hammers or other noisy methods to clean equipment. <p>As there is minimal ground disturbance and minimal equipment use, air quality impacts would be negligible.</p>

9.2 Biodiversity impacts

Is the proposed activity likely to...	Applicable?	Impact level (negligible; or low, medium or high adverse; or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
1. affect a declared area of outstanding biodiversity value, critical habitat or environmental asset of intergenerational significance?	No			
2. result in the clearing or modification of vegetation, including ecological communities and plant community types of conservation significance? ^	Yes	Negligible	<p>Grass and low groundcover vegetation may need to be trimmed at work sites and along access routes on existing maintained easements to allow safe access for trucks, equipment and workers.</p> <p>Pole 15 (to be replaced) is within the boundaries of a Threatened Ecological Community, Cumberland Plain Woodland. However, the H Pole is adjacent to an unpaved access road, and the individual replacement poles would be installed at approximately the same distance from the edge of this road as the existing poles and within 1.5 to 2 m of them. There is vegetation within approximately 1 to 2 meters of the locations of the existing poles and the proposed replacement poles. Trimming of the vegetation within a 2 m radius of the replacement poles may be required.</p>	<p>Works would be conducted in accordance with the “Ecology” section of Endeavour Energy’s Environmental Guidelines Handbook. Measures to minimise impacts on vegetation, including ecological communities and plant community types of conservation significance, would include:</p> <ul style="list-style-type: none"> • Avoiding disturbing previously undisturbed areas by using established access tracks to work sites. • Only trimming vegetation for safety clearances of electrical assets as defined in Endeavour Energy’s Mains Maintenance Instruction 0013 – Vegetation Clearance Management. • Avoiding disturbing habitat such as hollow bearing trees, intact vegetation and drainage lines. • Making all workers aware of the sensitive ecology in or near work sites and the need to avoid disturbing habitat such as bush rock,

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Is the proposed activity likely to...	Applicable?	Impact level (negligible; or low, medium or high adverse; or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
				<p>tree hollows, nests, intact vegetation and drainage lines.</p> <ul style="list-style-type: none"> • Ensuring no works are carried out in undisturbed areas (including storing equipment, parking vehicles or accessing work sites). • Removing and treating any woody weeds identified within the immediate worksite where poles 13 and 15 are to be replaced.
3. endanger, displace or disturb terrestrial or aquatic fauna, including fauna of conservation significance, or create a barrier to their movement? ^	No			
4. result in the removal of protected flora or plants or fungi of conservation significance? ^	No			
5. contribute to a key threatening process to biodiversity or ecological integrity?	No			
6. introduce weeds, pathogens, pest animals or	Yes	Negligible	Lyndal Kaye, NPWS Ranger, Cumberland Area, stated in an email on 23 February 2024 that: "Phytophthora protocols need to be used for all	All precautions would be taken so that weeds and diseases are not spread through the area in accordance with the "Pests, Weeds and Diseases"

Review of Environmental Factors: Feeder 9L5 Augmentation Stage 1

Is the proposed activity likely to...	Applicable?	Impact level (negligible; or low, medium or high adverse; or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
genetically modified organisms into an area?			vehicles, plant and equipment including boots on entering and leaving the park. The park currently does not have phytophthora that we are aware of however it is easily transported on equipment, plant, vehicles and boots."	section of Endeavour Energy's Environmental Guidelines Handbook. Workers would check and clean boots, vehicles, plant and equipment when entering and leaving William Howe Regional Park according to: <ul style="list-style-type: none"> Annexure C - Hygiene Protocol for Mitigating the Spread of Pests, Noxious Weeds and Diseases in company standard EMS 0004: Managing Vegetation Near Electrical Infrastructure - Weed and Disease Mitigation. A copy of this standard is attached to this REF.

Community impacts

Is the proposed activity likely to...	Applicable?	Impact level (negligible; or low, medium or high adverse; or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
1. affect community services or infrastructure?	No			

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Is the proposed activity likely to...	Applicable?	Impact level (negligible; or low, medium or high adverse; or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
2. affect sites important to the local or broader community for their recreational or other values or access to these sites?	No			
3. affect economic factors, including employment, industry and property value?	No			
4. have an impact on the safety of the community?	No			
5. cause a bushfire risk?	No			
6. affect the visual or scenic landscape? ^	Yes	Negligible	Power poles already present in the landscape would be replaced with slightly taller poles (14.7 to 16.4m in height) so there would be no significant changes to the visual or scenic landscape.	N/A

9.3 Natural resource impacts

Is the proposed activity likely to...	Applicable?	Impact level (negligible; or low, medium or high adverse; or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
1. result in the degradation of the park or any other area reserved for conservation purposes?	No			
2. affect the use of, or the community's ability to use, natural resources?	Yes	Negligible	It may be necessary to temporarily restrict access to worksites within the Park while works are being undertaken to ensure visitor safety.	Signage notifying park visitors of the works would be placed at all park entrances prior to commencement. Worksites where there would be a possibility of park visitors coming into close proximity of works, such as on the unsurfaced vehicle track, would be barricaded or taped off to prevent access and ensure visitor safety. Signage would be placed on the unsurfaced vehicle track approximately 150 m to the west and east of the Pole 15 worksite to warn approaching cyclists and walkers of works and partial track closure ahead.
3. involve the use, wastage, destruction or depletion of natural resources including water, fuels, timber or extractive materials? ^	No			
4. provide for the sustainable and efficient use of water and energy? †	No			

9.4 Aboriginal cultural heritage impacts

Is the proposed activity likely to...	Applicable?	Impact level	Reasons	Safeguards/mitigation measures
		(negligible; or low, medium or high adverse; or positive; or NA)	(describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	
1. disturb the ground surface or any vegetation likely to contain culturally modified trees?	Yes	Negligible	A total of 12 holes would be drilled with a borer, with a diameter of 750 mm and to a depth of 2.3 to 2.5 m, to replace 3 H poles, 1 3-pole structure and 3 ground stays. The existing poles and ground stays would be removed and the holes left would be filled with spoil from the nearest new hole. Ready mix concrete would be poured into the holes around the replacement poles and ground stays to about ¾ the depth of the hole, and spoil would be used to fill the remainder. Trucks would access the work sites to transport equipment and materials. Ground disturbance is estimated to be approximately 2 m ² around each hole, for a total area of approximately 24m ² .	<p>If, during the course of the activity:</p> <ul style="list-style-type: none"> any Aboriginal objects, as defined under the NPW Act, are uncovered or discovered; and/or any relics, as defined under the NSW Heritage Act 1977, are uncovered or discovered, <p>then works would immediately cease and the NPWS would be notified, unless the objects and/or relics are subject to a valid Aboriginal Heritage Impact Permit or Heritage Permit. Work would not recommence until advice to do so has been provided by NPWS.</p>
2. affect or occur near known Aboriginal objects, Aboriginal places or an Aboriginal cultural asset of intergenerational significance? If so, can impacts be avoided? How?	No		There were no known Aboriginal heritage items or sites identified within or in close proximity to the areas of proposed works, as searched on AHIMS on 1 March 2024.	
3. affect areas: a. within 200 m of waters	Yes	Negligible	The proposed works consist predominantly of replacement of overhead conductors which intersect a number of first and second order	See 9.4.1 above.

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Is the proposed activity likely to...	Applicable?	Impact level (negligible; or low, medium or high adverse; or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
<ul style="list-style-type: none"> b. within a sand dune system c. on a ridge top, ridge line or headland d. within 200 m below or above a cliff face e. in or within 20 m of a cave, rock shelter or a cave mouth? <p>If so, can impacts be avoided? How?</p>			<p>watercourses, including; Narellan Creek, Annan Creek, and Kenny Creek. Works to replace Pole 3 would occur approximately 140m to the southwest of Kenny Creek. Works to replace Pole 5 would occur approximately 80 m to the northeast of Annan Creek.</p>	
<p>4. affect wild resources which are used or valued by the Aboriginal community or affect access to these resources?</p>	No			
<p>5. affect access to culturally important locations?</p>	No			

9.5 Other cultural heritage impacts

Is the proposed activity likely to...	Applicable?	Impact level (negligible; or low, medium or high adverse; or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
1. affect or occur near places, buildings or landscapes of heritage significance? ^	No			
2. impact on relics or moveable heritage items, or an area with a high likelihood of containing relics? ^	No			
3. impact on vegetation of cultural landscape value (e.g. gardens and settings, introduced exotic species, or evidence of broader remnant land uses)?	No			

9.6 Impacts on matters of national environmental significance

Is the proposal likely to affect MNES, including:	Applicable?	Likely impact (negligible, low, medium or high adverse; or positive; or N/A)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
1. listed threatened species or ecological communities)?	Yes	Negligible	See 9.2.2	See 9.2.2
2. listed migratory species?	No			
3. the ecology of Ramsar wetlands?	No			
4. world heritage values of World Heritage properties?	No			
5. the national heritage values of national heritage places?	No			

9.7 Cumulative impacts

There are no known construction projects planned in the vicinity of the proposed works during the estimated construction period. As such the construction of this proposal would not contribute to any cumulative impacts. The operation of the proposal has no impacts above the operation of the existing electricity distribution network. As such the operation of the project would not contribute to any cumulative impacts. The project forms part of a works program to ensure the electricity demands of the community are met. This will have a beneficial cumulative effect on the community

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When considered with other projects, is the proposed activity likely to affect...	Applicable?	Impact level (negligible; or low, medium or high adverse; or positive; or NA)	Reasons (describe the type, nature and extent of impact, taking into account the receiving environment and proposed safeguards which will limit the impact)	Safeguards/mitigation measures
1. natural landscape or biodiversity values through cumulative impacts?	No			
2. cultural (Aboriginal, shared and historic heritage) values through cumulative impacts?	No			
3. social (amenity, recreation, education) values through cumulative impacts?	No			
4. the community through cumulative impacts on any other part of environment (e.g. due to traffic, or waste generation)?	Yes	Positive	The proposal is part of a larger works program to ensure the electricity demands of the community are met.	Nil

10. Proposals needing more information

10.1 Lease or licence proposals under s 151 National Parks and Wildlife Act

10.1.1 Sustainability of the proposal

This section is not applicable to the proposed works.

10.1.2 Consultation requirements

This section is not applicable to the proposed works.

10.2 Telecommunications facilities

10.2.1 Consideration of s 153D National Parks and Wildlife Act

This section is not applicable to the proposed works.

Table 4. Consideration of matters for telecommunications facilities

Factors requiring consideration	Response
1. Are there feasible alternative sites for the facility on land that is not reserved under the NPW Act?	This section is not applicable to the proposed works.
2. Does the site of any aboveground facility cover the minimum area possible?	This section is not applicable to the proposed works.
3. Is the facility to be designed and constructed to minimise risk of damage to the facility from bushfires?	This section is not applicable to the proposed works.
4. Has the site and construction of the facility been selected to, as far as practicable, minimise visual impact?	This section is not applicable to the proposed works.
5. Is it feasible to use an existing means of access to the site?	This section is not applicable to the proposed works.
6. Is the facility essential for the provision of telecommunications services for land reserved under the NPW Act or for surrounding areas to be served by the facility?	This section is not applicable to the proposed works.
7. Will the facility be removed and the site restored as soon as possible after the facility becomes redundant (e.g. due to changes in technology)?	This section is not applicable to the proposed works.
8. Has the site been selected after taking into account the objectives set out in any plan of management relating to the land?	This section is not applicable to the proposed works.
9. If feasible, will the facility be co-located with an existing structure or located at a site that is already disturbed by an existing lease, licence, easement or right of way. If co-location is proposed, please indicate if:	This section is not applicable to the proposed works.

Factors requiring consideration	Response
<ul style="list-style-type: none"> ○ the proponent will be the owner of the facility ○ the proponent will be a co-user of the facility. 	

10.2.2 Provision and maintenance of an asset protection zone

This section is not applicable to the proposed works.

10.3 Activities within regulated catchments

The proposed works would be undertaken within the Hawkesbury-Nepean Catchment

Table 5. Matters for all regulated catchments

Factors	Response
1. Water quality and quantity	
a. will the proposal have a neutral or beneficial effect on the quality of water entering a waterway?	This section is not applicable to the proposed works.
b. will the proposal have an adverse impact on water flow in a natural waterbody?	This section is not applicable to the proposed works.
c. will the proposal increase the amount of stormwater runoff from a site?	This section is not applicable to the proposed works.
d. will the proposal incorporate on-site stormwater retention, infiltration or reuse?	This section is not applicable to the proposed works.
e. what is the impact of the proposal on the level and quality of the water table?	This section is not applicable to the proposed works.
f. what will be the cumulative environmental impact of the proposal on the regulated catchment?	This section is not applicable to the proposed works.
g. does the proposal make adequate provision to protect the quality and quantity of ground water?	This section is not applicable to the proposed works.
2. Aquatic ecology	
a. will the proposal have a direct, indirect or cumulative adverse impact on terrestrial, aquatic or migratory animals or vegetation? How?	This section is not applicable to the proposed works.
b. does the proposal involve the clearing of riparian vegetation?	This section is not applicable to the proposed works.
c. will the proposal minimise or avoid the erosion of land abutting a natural waterbody and/or the sedimentation of a natural waterbody?	This section is not applicable to the proposed works.
d. will the proposal have an adverse impact on wetlands (not including those in mapped coastal wetlands and littoral rainforests areas)?	This section is not applicable to the proposed works.

Factors	Response
e. does the proposal include adequate safeguards and rehabilitation measures to protect aquatic ecology?	This section is not applicable to the proposed works.
f. if the development site adjoins a natural waterbody, are additional measures required to ensure a neutral or beneficial effect on the water quality of the waterbody?	This section is not applicable to the proposed works.
3. Flooding	
What is the likely impact of the proposal on periodic flooding that benefits wetlands and other riverine ecosystems?	This section is not applicable to the proposed works.
4. Recreation and public access	
a. what is the likely impact of the proposal on recreational land uses?	This section is not applicable to the proposed works.
b. will the proposal maintain or improve public access to and around foreshores without adverse impact on natural waterbodies, watercourses, wetlands or riparian vegetation?	This section is not applicable to the proposed works.

Specific matters requiring consideration in the Sydney Drinking Water catchment

This section is not applicable to the proposed works.

Table 6. NorBE assessment for Sydney Drinking Water Catchment

NorBE assessment questions	Response
1. Are there any identifiable potential impacts on water quality? What pollutants are likely? At what stage do the impacts occur?	This section is not applicable to the proposed works.
2. For each pollutant, what are the safeguards needed to prevent or mitigate potential impacts on water quality?	This section is not applicable to the proposed works.
3. Will the safeguards be adequate for the time required? How will they need to be maintained?	This section is not applicable to the proposed works.
4. Will all impacts on water quality be effectively contained on the site by the identified safeguards (above) and not reach any watercourse, waterbody or drainage depression? Or will impacts on water quality be transferred outside the site for treatment? How? Why?	This section is not applicable to the proposed works.
5. Is it likely that a neutral or beneficial effect on water quality will occur? Justify	This section is not applicable to the proposed works.

Specific matters requiring consideration in the Sydney Harbour Catchment's Foreshores and Waterways Area

This section is not applicable to the proposed works.

Table 7. Additional factors in Sydney Harbour's Foreshores and Waterways Area

Factors requiring consideration	Response
1. Is the activity consistent with the following principles— a. Sydney Harbour is a public resource, owned by the public, to be protected for the public good b. the public good has precedence over the private good c. the protection of the natural assets of Sydney Harbour has precedence over all other interests?	This section is not applicable to the proposed works.
2. Will the activity promote the equitable use of the Foreshores and Waterways Area, including use by passive recreation craft?	This section is not applicable to the proposed works.
3. Will the activity have an adverse impact on the Foreshores and Waterways Area, including on commercial and recreational uses?	This section is not applicable to the proposed works.
4. Does the activity promote water-dependent land uses over other land uses?	This section is not applicable to the proposed works.
5. Will the activity minimise risk from rising sea levels or changing flood patterns as a result of climate change?	This section is not applicable to the proposed works.
6. Will the activity protect or reinstate natural intertidal foreshore areas, natural landforms and native vegetation?	This section is not applicable to the proposed works.
7. Does the development protect or enhance terrestrial and aquatic species, populations and ecological communities, including by avoiding physical damage to or shading of aquatic vegetation?	This section is not applicable to the proposed works.
8. Will the activity protect, maintain or rehabilitate watercourses, wetlands, riparian lands, remnant vegetation and ecological connectivity?	This section is not applicable to the proposed works.

10.4 Activities in River Murray riverine land

This section is not applicable to the proposed works.

Table 8. Planning principles for activities in River Murray riverine lands

Matters related to relevant planning principles	Response
Access	
1. Will the activity alienate or obstruct access to the foreshore of the River Murray?	This section is not applicable to the proposed works.
2. Will the activity adversely impact the stability of riverbanks and vegetation growth due to uncontrolled access?	This section is not applicable to the proposed works.
Bank disturbance	
3. Will the activity disturb the shape of the bank and riparian vegetation?	This section is not applicable to the proposed works.

Matters related to relevant planning principles	Response
Flooding	
4. Where the activity is occurring on land subject to inundation by floodwater:	This section is not applicable to the proposed works.
a. Are there hazards involved in developing the land?	This section is not applicable to the proposed works.
b. Will the activity have a redistributive effect on floodwater?	This section is not applicable to the proposed works.
c. Will the activity pose a pollution threat in the event of a flood?	This section is not applicable to the proposed works.
d. Will the activity add to cumulative effects on the behaviour of floodwater?	This section is not applicable to the proposed works.
e. Will infrastructure developed as part of the activity need to be replaced in the event of a flood? If so, at what cost?	This section is not applicable to the proposed works.
Land degradation	
5. Will the activity seek to avoid or reduce land degradation processes such as erosion, native vegetation decline, pollution of ground or surface water, groundwater accession, salination and soil acidity, and adverse effects on the quality of terrestrial and aquatic habitats?	This section is not applicable to the proposed works.
Landscape	
6. What measures will be taken to protect and enhance the riverine landscape (e.g. by maintaining native vegetation along the riverbank and adjacent land, rehabilitating degraded sites and stabilising and revegetating riverbanks with appropriate species)?	This section is not applicable to the proposed works.
Water quality	
7. Will the activity seek to reduce pollution caused by salts and nutrients entering the River Murray or otherwise improve the quality of water in the River Murray?	This section is not applicable to the proposed works.
Wetlands	
8. Where the activity may affect wetlands:	This section is not applicable to the proposed works.
a. Will the activity provide for a hydrological regime appropriate for the maintenance or restoration of the productive capacity of the wetland?	This section is not applicable to the proposed works.
b. Are measures such as a vegetated buffer incorporated into the activity to mitigate adverse effects on wetland values?	This section is not applicable to the proposed works.

11. Summary of impacts and conclusions

Table 9. Consideration of significance of impacts for each environmental factor

Environmental factor	Consideration	Significance of impact*
1. the environmental impact on the community	Social, economic and cultural impacts as described in sections 9.3, 9.5 and 9.6	Not significant
2. the transformation of the locality	Human and non-human environment as described in sections 9.1, 9.2 and 9.4	Not significant
3. the environmental impact on the ecosystems of the locality	Amount of clearing, loss of ecological integrity, habitat connectivity/fragmentation and changes to hydrology (both surface and groundwater) as described in sections 9.1, 9.2 and 9.4 and, for nationally listed threatened ecological communities, in section 9.7.	Not significant
4. reduction of the aesthetic, recreational, scientific or other environmental quality or value of the locality	Visual, recreational, scientific and other impacts as described in section 9.3.	Not significant
5. the effects on any locality, place or building that has— a. aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance, or b. other special value for present or future generations	Impacts to Aboriginal and historic heritage associated with a locality (including intangible cultural significance), architectural heritage, social/community values and identity, scenic values and others, as described in sections 9.3, 9.5 and 9.6 and (for MNES heritage places) section 9.7.	Not significant
6. the impact on the habitat of protected animals, within the meaning of the Biodiversity Conservation Act	Impacts to all native terrestrial species, including but not limited to threatened species, and their habitat requirements, as described in section 9.2.	Not significant
7. the endangering of a species of animal, plant or other form of life, whether living on land, in water or in the air	Impacts to all listed terrestrial and aquatic species, and whether the proposal increases the impact of key threatening processes, as described in section 9.2	Not significant
8. long-term effects on the environment	Long-term residual impacts to ecological, social and economic values as described in all parts of section 9.	Not significant
9. degradation of the quality of the environment	Ongoing residual impacts to ecological, social and economic as described in section 9.4.	Not significant
10. risk to the safety of the environment	Impacts to public and work health and safety, from contamination, bushfires, sea level rise, flood, storm surge, wind speeds, extreme heat, rockfall and landslip, and other risks likely to increase due to climate	Not significant

Environmental factor	Consideration	Significance of impact*
	change as described in sections 9.1, 9.3 and 9.4.	
11. reduction in the range of beneficial uses of the environment	Impacts to natural resources, community resources and existing uses as described in sections 9.3 and 9.4.	Not significant
12. pollution of the environment	Impacts due to air pollution (including odours and greenhouse gases); water pollution (water quality health); soil contamination; noise and vibration (including consideration of sensitive receptors); or light pollution, as described in sections 9.1 and 9.3.	Not significant
13. environmental problems associated with the disposal of waste	Transportation, disposal and contamination impacts as described in section 9.3.	Not significant
14. increased demands on natural or other resources that are, or are likely to become, in short supply	Impacts to land, soil, water, gravel, minerals and energy supply as described in section 9.4.	Not significant
15. the cumulative environmental effect with other existing or likely future activities	The negative synergisms with existing development or future activities as considered in section 9.8.	Not significant
16. the impact on coastal processes and coastal hazards, including those under projected climate change conditions	Impacts arising from the proposed activity on coastal processes and impacts on the proposed activity from those coastal processes and hazards, both current and future, as considered in section 9.1.	Not significant
17. applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1	Inconsistency with the objectives, policies and actions identified in local, district and regional plans, as considered in section 3.2.2.	Not significant
18. other relevant environmental factors.	Any other factors relevant in assessing impacts on the environment to the fullest extent, such as native title.	Not significant

In conclusion:

- There **is not*** likely to be a significant effect on the environment and an environmental impact statement is **not** required

Reason(s): The proposed works would involve replacing 3 existing H poles and 1 existing 3-pole structure with slightly taller poles within 1.5 to 2 m of the existing poles and replacing 3 ground stays within 1.5 to 2 m of existing ground stays. The works would occur within disturbed land that is regularly maintained as easements for electricity infrastructure. The works would result in total minimal ground disturbance of approximately 24 m² and would not require vegetation clearing other than grass trimming and possibly, very limited vegetation trimming to ensure adequate clearance. Access to the work sites would be via public roads and existing regularly maintained access tracks and easements.

- There **is not*** likely to be a significant effect on threatened species, populations, ecological communities or their habitats and a species impact statement is **not** required

Reason(s): Poles 3, 5 and 13 that would be replaced are not within areas of Threatened Ecological Communities (TEC) and are not in close proximity to recorded locations of threatened species. Pole 15 that would be replaced is within an area of the Cumberland Plain Woodland in the Sydney Basin Bioregion TEC. However the Pole is immediately adjacent to an unpaved access road, and there is no vegetation in the proposed positions of the replacement poles other than grasses, so no vegetation clearing would be required other than grass trimming and possibly, very limited vegetation trimming to ensure adequate clearance. An Assessment of Significance under the NSW *Biodiversity Conservation Act 2016* was prepared in relation to the Cumberland Plain Woodland TEC and concluded that a significant impact is not likely.

- The activity **is not*** likely to have a significant impact on matters of national environmental significance listed under the Cwth Environment Protection and Biodiversity Conservation Act

Reason(s): There are no World Heritage Properties, Commonwealth Heritage Places or National Heritage Places within the vicinity of the proposed work sites. An ecological assessment concluded that “[t]here is not likely to be a significant effect on Matters of National Environmental Significance, including EPBC listed flora and fauna.”

- The activity **will not*** require certification to the Building Code of Australia, Disability (Access to Premises – Buildings) Standards 2010 or Australian Standards in accordance with the NPWS Construction Assessment Procedures

12. Supporting documentation

Please provide details of documentation included with this application.

Table 10. Documents that accompany the review of environmental factors

Document title	Author	Date
EMS 0004: Managing Vegetation Near Electrical Infrastructure - Weed and Disease Mitigation	Endeavour Energy	
William Howe Regional Park Pole Replacement Ecological Assessment for Endeavour Energy	Roger Lembit - Principal Ecologist, Gingra Ecological Surveys	November 2022
Summary of Endeavour Energy’s Predecessors	Endeavour Energy	

13. Fees for external proponents

The initial fee will be paid on submission of an invoice to accounts.payable@endeavourenergy.com.au .

14. Declarations

As the person responsible for the **preparation** of the REF, I certify that, to the best of my knowledge, this REF is in accordance with the EP&A Act, the EP&A Regs and the Guidelines approved under section 170 of the EP&A Regs, and the information it contains is neither false nor misleading.

Signature	
Name (printed)	[REDACTED]
Position	Environmental Specialist
Date	

By endorsing the REF, the proponent confirms that the information in the REF is accurate and adequate to ensure that all potential impacts of the activity can be identified.

Signature	
Name (printed)	[REDACTED]
Position	Project Manager
Date	

Seal (if signing under seal):

15. References

National Parks and Wildlife, *William Howe Regional Park Plan of Management*, October 2015.

Appendix A: Ecological Assessment Report and Threatened species tests of significance

A test of significance was conducted by the consulting ecologist and is contained within below.

Scientific name	Common name	NSW status	EPBC status	Likelihood of occurrence	Potential impacts	Cross-reference to test of significance
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Species and communities listed under Biodiversity Conservation Act

Refer to the consulting ecologists report below.

Species and communities listed under Fisheries Management Act

Not applicable

Nationally listed species and communities

Refer to the consulting ecologists report below.

Please contact Endeavour Energy for copies of appendices if required.

Appendix B: EMS 0004, Managing Vegetation Near Electrical Infrastructure - Weed and Disease Mitigation

Please contact Endeavour Energy for copies of appendices if required.

Appendix C: Summary of Endeavour Energy's Predecessors

Please contact Endeavour Energy for copies of appendices if required.