

Submissions from Public Authorities - Natural Resources Access Regulator (NRAR)



Natural Resources  
Access Regulator

28<sup>th</sup> October 2020

Contact: David Zerafa  
Email: [david.zerafa@dpie.nsw.gov.au](mailto:david.zerafa@dpie.nsw.gov.au)  
Council ref: 60737E (D20/349186)  
File No: V15/2812-4#87

Mr Stephen Dunshea  
Chief Executive Officer  
Shoalhaven City Council  
PO Box 42  
Nowra NSW 2541

Attention: Ryan Jameson  
Coordinator - Local Planning Team

Dear Ryan,

**Re: Planning Proposal PP054 - Rezoning of Riparian Land at Lot 1 DP 949932, Taylors Lane, Cambewarra**

I refer to your request of 4 August 2020 seeking comments from the Natural Resources Access Regulator (NRAR) regarding the abovementioned Planning Proposal (PP) PP054. NRAR apologies for the delay in responding to your enquiry.

NRAR has considered the PP and provides the following comments for your attention and consideration. Of interest to NRAR is the proposal to:

- a. *Rezone part of an existing riparian area from E2 Environmental Conservation to R1 General Residential; and*
- b. *Amend the classification and extent of the watercourse on the Riparian Lands and Watercourses Map.*

NRAR concurs with the assessment of the watercourse by Niche Environment and Heritage (2020) that the subject watercourse and its associated riparian zone play an important function in conveyance of flows from higher up in the catchment on the subject lot and in the maintenance of water quality flowing downstream. Further, the existing vegetation in the subject watercourse plays a key role in soil stabilisation of the bed and banks.

The study recommends:

- Retaining land within 10m of the watercourse centreline as a minimum riparian corridor/zone will maintain the conveyance and water quality functions of the watercourse.
- Retaining the native vegetation in the vicinity of the watercourse within a wider riparian corridor will enhance the ecological function of the watercourse and provide the opportunity to improve vegetation condition and habitat quality.

NRAR does not concur with the recommendation to:

- Apply the principles of the "averaging rule" described in NRAR Guidelines for riparian corridors to reduce the width of the minimum recommended riparian corridor in several unvegetated places.

In this regard, NRAR reiterates previous advice provided by email on 25 May 2020 as follows.

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NRAR concurs that the watercourse upstream of the existing vegetation is relatively minor and that the extent of E2 zoned area could be considered for rezoning if there are no other objectives/requirements such as for connectivity along the watercourse to the vegetation on the ridge upstream.

Given the substantial change proposed between the current and proposed E2/riparian areas, NRAR does not consider that offering additional flexibility for the development footprint in applying the averaging rule for such a small remaining area is justified. Reducing the corridor width is unnecessary and can be avoided.

Development encroachments into the outer riparian corridor as suggested in the PP by applying the NRAR guideline averaging rule/matrix can be avoided. The guideline matrix is intended to provide for some flexibility and not to be applied as a general rule. Reducing the width of the corridors will increase edge effects and reduce riparian values/functions of the affected corridors.

In consideration of site merits, NRAR concurs with the proposal to retain the existing vegetation but that the riparian corridor be kept at a uniform width to encapsulate the existing vegetation and enhance the viability of both the existing vegetation and the connection in between and to the main corridor. Reducing the corridor width to a total width of 10 metres is not supported.

In addition, the PP has measured the corridor width from the centreline of the watercourse which is not correct. The width of the corridor should be measured from the bank of the watercourse or edge of the depression not the centreline. The minimum total corridor width should be 20 metres plus the channel width.

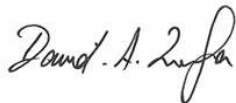
If rezoned, the conceptual subdivision and road layout should also be reconsidered so as to provide for physical separation of the riparian area from the residential zone as opposed to having lots backing onto the riparian corridor as currently illustrated.

It is also important that the corridor is not reduced in width where proposed Lot 315 is indicated in the vicinity of the existing dam by wash channel to ensure the integrity of the dam and by-wash is preserved. Both the road layout and lot layout where Lot 315 is presently indicated should be given due consideration in this regard.

Whilst the future subdivision layout including water cycle management, grading and road geometry are all to be considered in more detail at DA stage, it is appropriate for the PP to give conceptual consideration to these aspects particularly offline stormwater quality treatment and management to be sure that infrastructure/work for these purposes do not result in encroachments into the riparian corridors.

Any questions regarding this correspondence should be directed to David Zerafa on email [david.zerafa@dpie.nsw.gov.au](mailto:david.zerafa@dpie.nsw.gov.au)

Yours sincerely



David Zerafa  
Senior Water Regulation Officer  
Water Regulation Operations  
Natural Resources Access Regulator



Submissions from Public Authorities - Natural Resources Access Regulator (NRAR)

Bridge Rd, Nowra NSW 2541 | 02 4429 3111  
Deering St, Ulladulla NSW 2539 | 02 4429 8999

Address all correspondence to

The Chief Executive Officer, PO Box 42, Nowra NSW 2541 Australia  
council@shoalhaven.nsw.gov.au | DX5323 Nowra | Fax 02 4422 1816

[shoalhaven.nsw.gov.au](http://shoalhaven.nsw.gov.au)     

Council Reference: 60737E (D20/528356)  
Your reference: V15/2812-4#87

27/11/2020

Natural Resources Access Regulator ( NRAR )  
Locked Bag 5022  
PARRAMATTA NSW 2124

Attn: David Zerafa - Senior Water Regulation Officer

By email only: [david.zerafa@dpie.nsw.gov.au](mailto:david.zerafa@dpie.nsw.gov.au)

**Planning Proposal PP054 - Rezoning of Riparian Land at Lot 1 DP 949932,  
Taylors Lane, Cambewarra**

I refer to your letter dated 28 October 2020 providing comments on behalf of the Natural Resources Access Regulator (NRAR) regarding the above planning proposal (PP). I appreciate the time you have taken to review and provide comment on the PP.


NRAR has raised concerns with several aspects of the PP which are summarised in the table below. Responses from Council are provided next to each concern/issue for NRAR's consideration. We would be grateful if NRAR would advise specifically whether it supports or objects to the progression of the PP, having regard for Council's responses below.

We would appreciate the opportunity to meet to discuss and work through these matters further and will be in contact to seek a suitable time/date.

Issue/concern	Response
NRAR concurs with the retention of the existing vegetation in the proposed riparian corridor but does not support the use of the averaging rule to reduce part of the corridor width to 10m.	Noted. It is proposed to remove the use of the averaging rule from the proposal so that the riparian corridor has a uniform width of 20m in between the vegetated areas to be incorporated in the riparian corridor. The amended proposal will correspond with the 'ultimate riparian corridor' suggested in the study by Niche Environment & Heritage (copied below).



Submissions from Public Authorities - Natural Resources Access Regulator (NRAR)

	 <p>Ultimate riparian corridor (blue and green highlighted areas), Niche 2020.</p>
<p>The PP has measured the corridor width from the centreline of the watercourse which is not correct. The width of the corridor should be measured from the bank of the watercourse or edge of the depression not the centreline. The minimum total corridor width should be 20 metres plus the channel width.</p>	<p>Noted. The riparian corridor recommended in the Niche study and on which the PP is based was informed by detailed site analysis including field survey. While it concluded that there is a 1<sup>st</sup> order stream present, it was observed to have no clearly defined bed, banks or channel. Hence the study concluded that the corridor width could be measured from the centreline and that this would be sufficient to maintain the watercourse's conveyance and water quality objectives. The proposed riparian corridor also incorporates the additional vegetated areas which will further assist to maintain bank stability and water quality functions. On this basis it is suggested that the proposed riparian corridor (without the averaging rule) is acceptable in this case and we respectfully ask that NRAR reconsider its position in this regard.</p>
<p>If rezoned, the conceptual subdivision and road layout should be reconsidered so as to provide for physical separation of the riparian area from the residential zone as opposed to having lots backing onto the riparian corridor as currently illustrated.</p>	<p>Noted. Further consideration will be given to the layout as part of the assessment of any development application by Council, if the land is rezoned.</p>
<p>The corridor should not be reduced in width where proposed</p>	<p>Noted. Further consideration will be given to the layout as part of the assessment of</p>

Submissions from Public Authorities - Natural Resources Access Regulator (NRAR)

Lot 315 is indicated in the vicinity of the existing dam by-wash channel. Both the road layout and lot layout in this area should be given due consideration in this regard.	any development application by Council, if the land is rezoned.
The PP should give conceptual consideration to grading, road geometry and particularly offline stormwater quality treatment / management to ensure that associated infrastructure/works do not encroach into the riparian corridors.	Noted. These matters have been considered at a conceptual level and further consideration will be given as part of the assessment of any development application, if the land is rezoned. Based on the assessment undertaken as part of the PP, Council is satisfied that the proposal can accommodate offline stormwater quality treatment / management without encroachments into the riparian corridor.

In the meantime, should you have any questions or require any further information please contact me on 0407856422 or [ryan.jameson@shoalhaven.nsw.gov.au](mailto:ryan.jameson@shoalhaven.nsw.gov.au). Please quote Council's reference 60737E (D20/528356).

Yours faithfully



**Ryan Jameson**  
Coordinator - Local Planning Team

Submissions from Public Authorities - Natural Resources Access Regulator (NRAR)

**Ryan Jameson**

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**From:** David Zerafa <david.zerafa@dpie.nsw.gov.au>  
**Sent:** Tuesday, 8 December 2020 1:18 PM  
**To:** Ryan Jameson  
**Cc:** NRAR ServiceDesk  
**Subject:** HPECM: RE: HPECM: NRAR response to Planning Proposal 0054 - Taylors Lane Cambewarra

Hi again Ryan.

Seems fine and establishes a more uniform width corridor.

For on-ground practical purposes can I just suggest that you apply a "smooth" edge to the zone boundary. Not one that goes around individual trees with little indentations.

Call me on my mobile if you need to discuss.

Regards David

David Zerafa  
Senior Water Regulation Officer  
Natural Resources Access Regulator  
Department of Planning, Industry & Environment

NSW Government Offices  
5 O'Keefe Avenue, Nowra  
PO Box 309 Nowra 2541  
Phone (02) 4428 9142 / Mobile 0427 663187  
Email: [david.zerafa@dpie.nsw.gov.au](mailto:david.zerafa@dpie.nsw.gov.au)  
Website: <http://www.industry.nsw.gov.au/water>

---

**From:** Ryan Jameson <Ryan.Jameson@shoalhaven.nsw.gov.au>  
**Sent:** Monday, 7 December 2020 1:03 PM  
**To:** David Zerafa <david.zerafa@dpie.nsw.gov.au>  
**Cc:** NRAR ServiceDesk <nrar.servicedesk@industry.nsw.gov.au>  
**Subject:** RE: HPECM: NRAR response to Planning Proposal 0054 - Taylors Lane Cambewarra

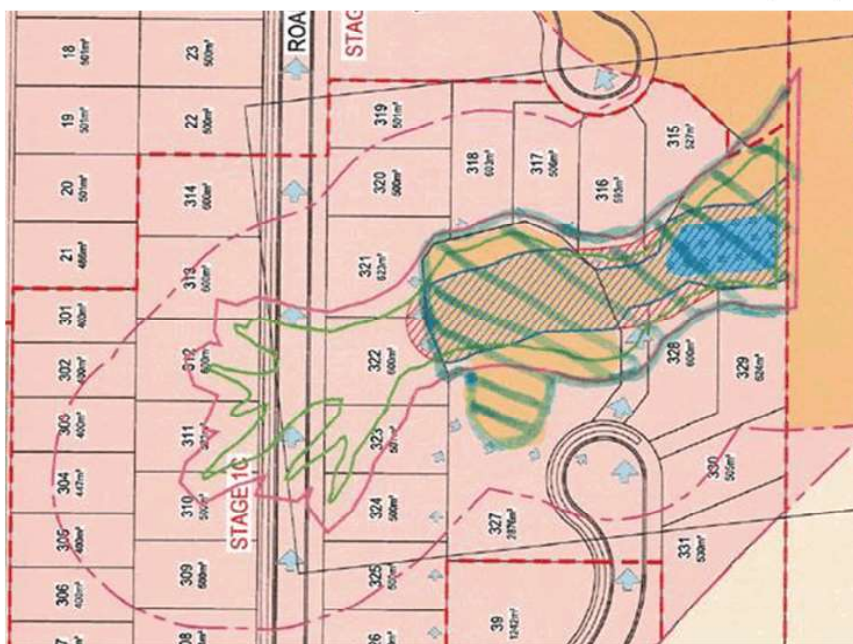
Hello David,

Thanks again for your additional comments. Can you advise if NRAR would be supportive of a revised proposal based on the draft mark-up attached (and shown below)?

It shows a revised riparian corridor (proposed E2 zone) in green hatching, with the western extent of the corridor located at the trees proposed to be retained, and incorporating a 5m buffer measured from the 'bank' (blue line) shown in Figure 6 of the Niche study.

We will produce an accurate revised rezoning plan prior to public exhibition but could provide this to you now if that would assist.

Submissions from Public Authorities - Natural Resources Access Regulator (NRAR)



Many thanks  
Ryan

**From:** David Zerafa <[david.zerafa@dpie.nsw.gov.au](mailto:david.zerafa@dpie.nsw.gov.au)>

**Sent:** Tuesday, 1 December 2020 2:17 PM

**To:** Ryan Jameson <[Ryan.Jameson@shoalhaven.nsw.gov.au](mailto:Ryan.Jameson@shoalhaven.nsw.gov.au)>

**Cc:** NRAR ServiceDesk <[nrar.servicedesk@industry.nsw.gov.au](mailto:nrar.servicedesk@industry.nsw.gov.au)>

**Subject:** FW: HPECM: NRAR response to Planning Proposal 0054 - Taylors Lane Cambewarra

Hi again Ryan.

No need for a meeting from my perspective.

I am mostly comfortable with your consideration and responses to NRARs concerns.

Only exception is in relation to the measuring of the riparian corridor from the centre of the watercourse rather than the bank. I was referring to Figure 6 and Table 3 of the Niche report which defines a bank as illustrated below.

DE21.57 - Attachment 1



Submissions from Public Authorities - Natural Resources Access Regulator (NRAR)



It would be appropriate that a buffer be measured from this bank as identified. However in consideration of your request, can I suggest a vegetated corridor width which captures the bank identified above plus 5 metres be established (noting that the corridor does not extend upstream of the trees to be preserved).

Consideration of other matters raised by NRAR at future development stages is noted.

Regards David

David Zerafa  
Senior Water Regulation Officer  
Natural Resources Access Regulator  
Department of Planning, Industry & Environment

NSW Government Offices  
5 O'Keefe Avenue, Nowra  
PO Box 309 Nowra 2541  
Phone (02) 4428 9142 / Mobile 0427 663187  
Email: [david.zerafa@dpie.nsw.gov.au](mailto:david.zerafa@dpie.nsw.gov.au)  
Website: <http://www.industry.nsw.gov.au/water>

**From:** Ryan Jameson <[Ryan.Jameson@shoalhaven.nsw.gov.au](mailto:Ryan.Jameson@shoalhaven.nsw.gov.au)>  
**Sent:** Friday, 27 November 2020 7:07 PM  
**To:** David Zerafa <[david.zerafa@dpie.nsw.gov.au](mailto:david.zerafa@dpie.nsw.gov.au)>  
**Cc:** NRAR Service Desk Mailbox <[nrar.servicedesk@dpie.nsw.gov.au](mailto:nrar.servicedesk@dpie.nsw.gov.au)>  
**Subject:** RE: HPECM: NRAR response to Planning Proposal 0054 - Taylors Lane Cambewarra

Hello David,



Submissions from Public Authorities - Natural Resources Access Regulator (NRAR)

Please find attached Council's response to NRAR's comments for your consideration.

We would appreciate the opportunity to meet to discuss NRAR's concerns and our responses further, either face to face or tele/video conference. Could you kindly advise of date/time suitable to you?

Kind regards  
Ryan

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**From:** David Zerafa <[david.zerafa@dpie.nsw.gov.au](mailto:david.zerafa@dpie.nsw.gov.au)>  
**Sent:** Wednesday, 28 October 2020 10:51 AM  
**To:** Council Email <[Council@shoalhaven.nsw.gov.au](mailto:Council@shoalhaven.nsw.gov.au)>  
**Cc:** Ryan Jameson <[Ryan.Jameson@shoalhaven.nsw.gov.au](mailto:Ryan.Jameson@shoalhaven.nsw.gov.au)>; Lisa Kennedy <[Lisa.Kennedy@planning.nsw.gov.au](mailto:Lisa.Kennedy@planning.nsw.gov.au)>  
**Subject:** HPECM: NRAR response to Planning Proposal 0054 - Taylors Lane Cambewarra

Dear Ryan.

My apologies for the delay in responding to your request.

Please find NRAR comments attached.

Regards David

David Zerafa  
Senior Water Regulation Officer  
Natural Resources Access Regulator  
Department of Planning, Industry & Environment

NSW Government Offices  
5 O'Keefe Avenue, Nowra  
PO Box 309 Nowra 2541  
Phone (02) 4428 9142 / Mobile 0427 663187  
Email: [david.zerafa@dpie.nsw.gov.au](mailto:david.zerafa@dpie.nsw.gov.au)  
Website: <http://www.industry.nsw.gov.au/water>

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Submissions from Public Authorities - Transport for NSW (TfNSW)



Transport  
for NSW

Our ref: STH17/00220/18  
Contact: Andrew Lissenden 0418 962 703  
Your ref: 60737E (D20/349186)

10 August 2020

Ryan Jameson  
Shoalhaven City Council  
BY EMAIL: council@shoalhaven.nsw.gov.au

**PLANNING PROPOSAL (PP054) – LOTS 1 DP 949932 TAYLORS LANE, CAMBEWARRA – REZONING OF RIPARIAN LAND – AGENCY CONSULTATION**

Dear Ryan

Transport for New South Wales (TfNSW) refers to Council's correspondence dated 4 August 2020 regarding the above planning proposal (PP).

TfNSW has reviewed the information provided focusing on the impact to the state road network. TfNSW notes:

- The key state road is Moss Vale Road;
- The PP seeks to amend the Shoalhaven Local Environmental Plan (SLEP) 2014 to rezone part of an existing riparian area within Lot 1 DP 949932 from Zone E2 Environmental Conservation to Zone R1 General Residential (refer to **Attachment 1**) with associated amendments to the urban release area (URA) boundary, minimum lot size maps, etc. This enabling approximately 31 additional residential allotments within the subject lot/URA;
- All access to the PP site will be via the access arrangements and associated connection with Moss Vale Road as approved under SF10632 (i.e. provision of a roundabout at the access point/connection with Moss Vale Road that will service both the southern and northern URA areas); and
- Council is seeking comments from TfNSW as per the requirements of the PP's Gateway determination.

Having regard for the above, TfNSW does not object to the PP in principle as it is unlikely to have a significant impact on the state road network. This being due to the intersection works on Moss Vale Road that are required as part of the subdivision approved under SF10632.

If you have any questions please contact Andrew Lissenden on 0418 962 703. Please ensure that any further email correspondence is sent to development.southern@rms.nsw.gov.au.

Yours faithfully



Andrew Lissenden  
Development Assessment Officer  
Community and Place | South Region  
Cc: ryan.jameson@shoalhaven.nsw.gov.au

Submissions from Public Authorities - Transport for NSW (TfNSW)

**Attachment 1**



DE21.57 - Attachment 1



Submissions from Public Authorities - Shoalhaven Water

**Ryan Jameson**

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**From:** Ljupco Lazarevski  
**Sent:** Monday, 31 August 2020 12:45 PM  
**To:** Kerrie Mackey; Ryan Jameson; Abrar Ahmed  
**Cc:** Matthew Kidd; Ivan Wady; Anthony Galea  
**Subject:** FW: Planning Proposal PP054 – Comments by Shoalhaven Water

**Kerrie/Ryan,**

I refer to the application to change much of the land zoned E2 to Residential R1 and reduce considerably that which was zoned E2. Shoalhaven Water does not object to the planning proposal to change much of the E2 zone land to R1.

Any approved development of this new R1 zoned land will be required to:

- Pay Section 64 Charges for water supply and sewerage services, and
- Extend the water supply reticulation to serve all new lots, and
- Provide an appropriate sewerage system to serve each new lot and extend and connect to the existing sewerage system, and
- Pay a contribution towards the metered service to each new lot, and
- Provide appropriate easements over all sewerage system/s where it is not located in public roads.

It is noted that the reduction of the land zoned E2 may cause the need to consider alternative sewer servicing option/s (eg, pressure sewer) as the land closer to the centreline of the water course is more likely to more often have ground water and hence impact on a gravity sewer system by way of infiltration.

**Abrar,**

I have copied you in so that you may check the sewer strategy for Moss Vale Rd – South and confirm if there is any impact on the proposed sewer infrastructure to serve MVR-South and this proposed change to the E2 zoned land.

DE21.57 - Attachment 1

Submissions from Public Authorities - Shoalhaven Water

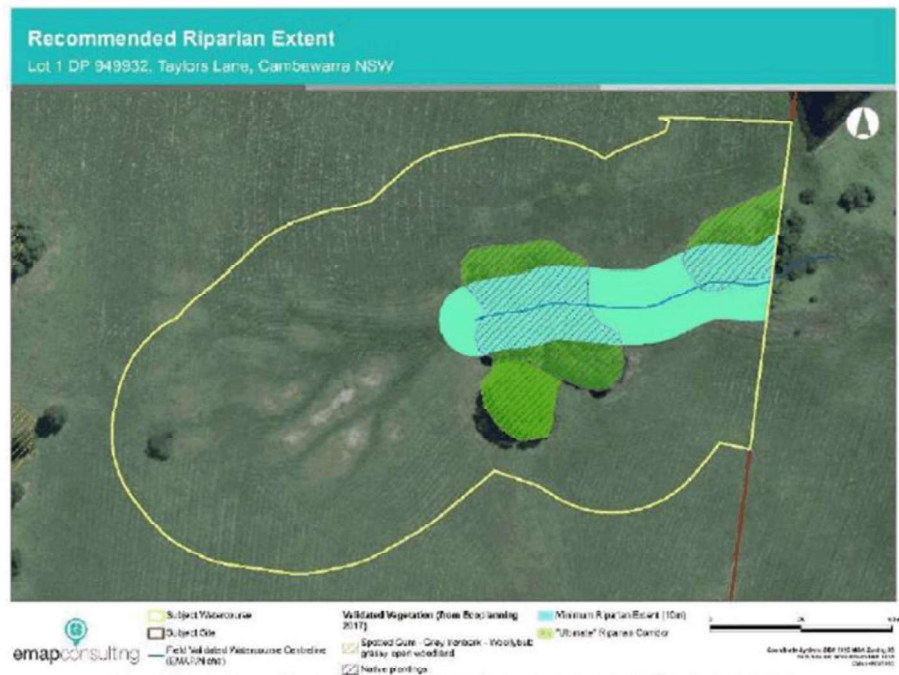


Figure 4: Recommended riparian extent (Niche Environment & Heritage, 2020)

Submissions from Public Authorities - Shoalhaven Water

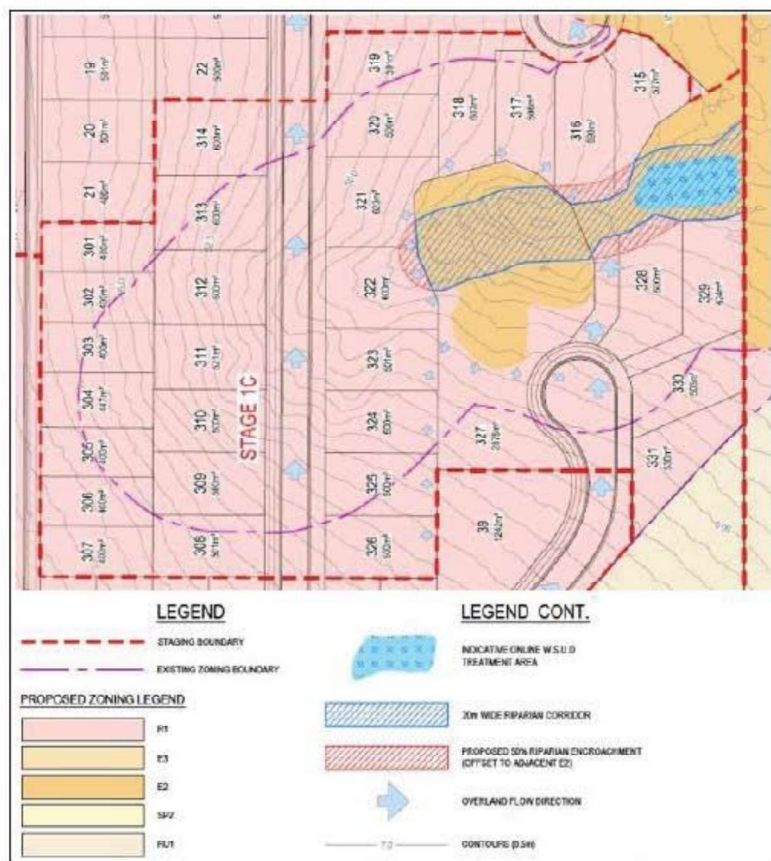


Figure 5: Proponent's revised rezoning proposal

Regards

**Ljupčo Lazarevski**

Unit Manager – Project/Development

Shoalhaven Water – Shoalhaven City Council

02 4429 3255

Bridge Rd (PO Box 42) Nowra NSW 2541

[Ljupco.Lazarevski@shoalhaven.nsw.gov.au](mailto:Ljupco.Lazarevski@shoalhaven.nsw.gov.au)

[www.shoalwater.nsw.gov.au](http://www.shoalwater.nsw.gov.au)



**From:** Kerrie Mackey <[Kerrie.Mackey@shoalhaven.nsw.gov.au](mailto:Kerrie.Mackey@shoalhaven.nsw.gov.au)>

**Sent:** Wednesday, 5 August 2020 10:53 AM

**To:** Ljupco Lazarevski <[Ljupco.Lazarevski@shoalhaven.nsw.gov.au](mailto:Ljupco.Lazarevski@shoalhaven.nsw.gov.au)>



## Submissions from Public Authorities - Shoalhaven Water

Cc: Matthew Kidd <[Matthew.Kidd@shoalhaven.nsw.gov.au](mailto:Matthew.Kidd@shoalhaven.nsw.gov.au)>; Ryan Jameson  
<[Ryan.Jameson@shoalhaven.nsw.gov.au](mailto:Ryan.Jameson@shoalhaven.nsw.gov.au)>

**Subject:** Letter - Agency Consultation – Planning Proposal PP054 – Rezoning of Riparian Land at Taylors Lane,  
Cambewarra - Shoalhaven Water

Dear Ljupco,

Please find attached a letter and associated attachments seeking comments on Agency  
Consultation – Planning Proposal PP054 – Rezoning of Riparian Land at Taylors Lane,  
Cambewarra for your information.

If you have any questions relating to this matter, please contact Council's Strategic Planner Ryan  
Jameson on 0407 856 422 or via email [ryan.jameson@shoalhaven.nsw.gov.au](mailto:ryan.jameson@shoalhaven.nsw.gov.au).

Regards

**Kerrie Mackey**

**Senior Administration Officer – Strategic Planning**  
Shoalhaven City Council

02 4429 3426  
Bridge Rd (PO Box 42) Nowra NSW 2541  
[Kerrie.Mackey@shoalhaven.nsw.gov.au](mailto:Kerrie.Mackey@shoalhaven.nsw.gov.au)

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Submissions from Public Authorities Endeavour Energy

**Ryan Jameson**

**From:** Cornelis Duba <Cornelis.Duba@endeavourenergy.com.au>  
**Sent:** Tuesday, 25 August 2020 8:04 AM  
**To:** Council Email  
**Cc:** Ryan Jameson  
**Subject:** Shoalhaven City Council Planning Proposal PP054 Rezoning of Riparian Land at Taylors Lane, Cambewarra  
**Attachments:** EE FPJ 6007 Technical Review Request Aug 2019.pdf; SW08773 Work near underground assets.pdf; SW Work near overhead power lines.pdf; ENA EMF What We Know.pdf; EE Safety Plumbing.pdf; EE Safety on the job.pdf; EE MDI0044 Easements and Property Tenure.pdf; EE Guide for Padmount Substations.pdf

The General Manager  
Shoalhaven City Council

**ATTENTION: Ryan Jameson, Strategic Planner**

Dear Sir or Madam

I refer to Council's letter of 4 August 2020 regarding Planning Proposal PP054 at Taylors Lane, CAMBEWARRA (Lot 1 DP 949932) to amend Shoalhaven Local Environment Plan 2014 to:

- a. Rezone part of an existing riparian area from E2 Environmental Conservation to R1 General Residential;
- b. Amend the classification and extent of the watercourse on the Riparian Lands and Watercourses Map;
- c. Apply a 500m2 minimum lot size and the provisions of Clause 4.1H to the rezoned land. Clause 4.1H permits subdivision to create lots down to 300m2 in certain circumstances;
- d. Extend the Moss Vale Road South URA boundary to include the rezoned land.

Submissions need to be made to Council by 25 August 2020.

Please refer to Endeavour Energy's previous submissions made to Council on

- 19 February 2018 regarding Subdivision Application SF10632 at Taylors Lane, CAMBEWARRA (Lot 1 DP 949932, Lot 3 DP 851823) for 'Staged residential subdivision to create 79 Torrens Title allotments, including: 74 residential allotments; One (1) drainage lot containing water detention and treatment infrastructure; One (1) residue lot containing open space, an area proposed for future development in the centre of the site and a riparian corridor in the northern portion of the site; One (1) open space lot in the north western portion of the site to integrate with the identified open space to the west; and Provision of roads, drainage and utility infrastructure along with associated landscaping works'.
- 15 April 2019 regarding Subdivision Application SF10632 at Lot 1 & 104 Taylors Lane, CAMBEWARRA (Lot 1 DP 949932, Lot 3 DP 851823) for 'Staged residential subdivision to create 55 Torrens Title allotments, including: 52 residential allotments; One (1) open space lot to the west of Road 01 and south of Road 05 providing a connection to the open space to the west; One (1) open space lot to the north of Road 02 in the north west corner of the site; One (1) residue lot located in the central and eastern portion of the site; and Provision of roads, drainage and utility infrastructure along with associated landscaping works'.

As shown in the below site plan from Endeavour Energy's G/Net master facility model there are:

- No easements over the site benefitting Endeavour Energy (active easements are indicated by red hatching).
- 11,000 volt / 11 kV high voltage overhead power lines to opposite side of Taylors Lane.

Please note the location, extent and type of any electricity infrastructure, boundaries etc. shown on the plan is indicative only. In addition it must be recognised that the electricity network is constantly extended, augmented and

#### Submissions from Public Authorities Endeavour Energy

modified and there is a delay from the completion and commissioning of these works until their capture in the model. Generally (depending on the scale and/or features selected), low voltage (normally not exceeding 1,000 volts) is indicated by blue lines and high voltage (normally exceeding 1,000 volts but for Endeavour Energy's network not exceeding 132,000 volts / 132 kV) by red lines (these lines can appear as solid or dashed and where there are multiple lines / cables only the higher voltage may be shown). This plan only shows the Endeavour Energy network and does not show electricity infrastructure belonging to other authorities or customers owned electrical equipment beyond the customer connection point / point of supply to the property. This plan is not a 'Dial Before You Dig' plan under the provisions of Part 5E 'Protection of underground electricity power lines' of the Electricity Supply Act 1995 (NSW).

Subject to the foregoing and the following recommendations and comments Endeavour Energy has no objection to the Planning Proposal.

- Network Capacity / Connection

Endeavour Energy has noted the following in the Planning Proposal:

#### 4.4 State and Commonwealth Interests (Section D)

##### 4.4.1 Is there adequate public infrastructure for the Planning Proposal?

It is proposed to include the subject land in the Moss Vale Road South URA which will make it subject to the requirements of Part 6 of Shoalhaven LEP 2014. This requires satisfactory arrangements to be in place for the provision of State, local and public utility infrastructure before consent can be granted to the subdivision of the land.

The essential infrastructure required to service Moss Vale Road South URA (road upgrades, water and sewer trunk infrastructure, electricity, gas, telecommunications) is currently being planned and delivered by the responsible authorities as land in the initial stages is released. It is anticipated that planned infrastructure will have the capacity to service the subject land as the PP will not generate significant additional demand for infrastructure and services. The indicative yield of the subject land is 31 additional lots versus 950 lots for the overall URA.

Endeavour Energy's Asset Planning & Performance Branch whilst not having undertaken a detailed assessment of the Planning Proposal have provided the following advice:

*The additional 31 lots versus the 950 lots for the overall Moss Vale Road South Urban Release Area (URA) is not significant. It is even less significant given the additional URA's which Endeavour Energy is planning to supply from a future new zone substation.*

*Endeavour Energy has a draft network supply strategy for the greater Shoalhaven area. The draft strategic area plan sets out the preferred ultimate long-term network configuration. Within the strategic area plan staging scenarios include immediate short-term through to the ultimate long-term requirements. Ultimately, the mature load in the larger greenfield development area of Cambewarra will require the establishment of a new zone substation along with upstream transmission assets and downstream distribution feeders. To achieve this Endeavour Energy will need to acquire a suitable parcel of land for a network substation. (approximately 100m x 130m with road frontage).*

*Overall, an evidence-based approach on actual and forecast demand along with network constraints will ultimately determine the need date for each stage of network investment. The development of individual projects will be based on principles outlined in the strategic area plan when required.*

*Endeavour Energy is committed to making provisions for customers to connect to its network in a fair and equitable manner. This is in line with reasonable legislated user pays principles for connection works and in a manner, which will ensure an acceptable quality of supply for all existing and future customers.*



### Submissions from Public Authorities Endeavour Energy

Accordingly the future urban residential subdivision will be subject to Endeavour Energy's usual customer connection process. In due course the applicant for the future proposed development of the site will need to submit an application for connection of load via Endeavour Energy's Network Connections Branch to carry out the final load assessment and the method of supply will be determined. Depending on the outcome of the assessment, any required padmount substation/s will need to be located within the property (in a suitable and accessible location) and be protected (including any associated cabling) by an easement and associated restrictions benefiting and gifted to Endeavour Energy. Please find attached a copy of Endeavour Energy's Mains Design Instruction MDI 0044 'Easements and Property Tenure Rights'. Further details are available by contacting Endeavour Energy's Network Connections Branch via Head Office enquiries on telephone: 133 718 or (02) 9853 6666 from 9am - 4:30pm or on Endeavour Energy's website under 'Home > Residential and business > Connecting to our network' via the following link:

<http://www.endeavourenergy.com.au/>

Advice on the electricity infrastructure required to facilitate the proposed development can be obtained by submitting a Technical Review Request to Endeavour Energy's Network Connections Branch, the form for which FPJ6007 is attached and further details (including the applicable charges) are available from Endeavour Energy's website under 'Our connection services'. The response to these enquiries is based upon a desktop review of corporate information systems, and as such does not involve the engagement of various internal stakeholders in order to develop a 'Connection Offer'. It does provide details of preliminary connection requirements which can be considered by the applicant prior to lodging a formal application for connection of load.

Alternatively the applicant should engage a Level 3 Accredited Service Provider (ASP) approved to design distribution network assets, including underground or overhead. The ASP scheme is administered by NSW Trade & Investment and details are available on their website via the following link or telephone 13 77 88:

<http://www.resourcesandenergy.nsw.gov.au/energy-supply-industry/pipelines-electricity-gas-networks/network-connections/contestable-works>

- Network Asset Design

Endeavour Energy's Company Policy 9.2.5 'Network Asset Design', includes the following requirements for electricity connections to new urban subdivision / development:

#### **5.11 Reticulation policy**

##### *5.11.1 Distribution reticulation*

In order to improve the reliability performance of and to reduce the operating expenditure on the network over the long term the company has adopted the strategy of requiring new lines to be either underground cables or where overhead is permitted, to be predominantly of covered or insulated construction. Notwithstanding this strategy, bare wire overhead construction is appropriate and permitted in some situations as detailed below.

In areas with the potential for significant overhanging foliage, CCT is used to provide increased reliability as it is less susceptible to outages from wind-blown branches and debris than bare conductors. CCT must only be used in treed<sup>2</sup> areas as the probability of a direct lightning strike is low. In open areas where the line is not shielded from a direct lightning strike, bare conductors must generally be used for 11kV and 22kV reticulation.

Non-metallic Screened High Voltage Aerial Bundled Cable (NMSHVABC) must be used in areas which are heavily treed and where it is not practicable to maintain a tree clearing envelope around the conductors.

<sup>2</sup> A "treed" area is one with a substantial number of trees adjacent to the line, in each span. In these situations CCT is used to provide increased reliability as it is less susceptible to outages from wind-blown

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5.11.1.1 Urban areas

Reticulation of new residential subdivisions will be underground. In areas of low bushfire consequence, new lines within existing overhead areas can be overhead, unless underground lines are cost justified or required by either environmental or local council requirements.

Where underground reticulation is required on a feeder that supplies a mixture of industrial, commercial and/or residential loads, the standard of underground construction will apply to all types of load within that development.

Where ducting is used, adequate spare ducts and easements must be provided at the outset to cover the final load requirements of the entire development plan.

Extensions to the existing overhead 11kV/22kV network must generally be underground. Bare wire will be used for conductor replacements and augmentations except in treed areas where CCT or NMSHVABC must be used.

Extensions to the existing overhead LV network and augmentations must either be underground or ABC. Conductor replacements greater than 100m in route length must utilise aerial bundled cable.

Flooding and Drainage

Endeavour Energy requires the electricity network needed to service an area / development to be fit for purpose and meet the technical specifications, design, construction and commissioning standards based on Endeavour Energy's risk assessment associated with the implementation and use of the network construction / infrastructure for a flood prone site. Risk control has focused typically on avoiding the threat, but where this is not possible, reducing the negative effect or probability of flood damage to assets by implementing good design and maintenance practices.

Distribution substations should not be subject to flood inundation or stormwater runoff ie. the padmount substation cubicles are weatherproof not flood proof and the cable pits whilst designed to be self-draining should not be subject to excessive ingress of water. Section 7 Substation and switching stations of Endeavour Energy Mains Construction Instruction MCI 0006 underground distribution construction standards manual provides following details of the requirements for flooding and drainage in new padmount substation locations.

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### 7.1.6 Flooding and drainage

Substations are to be located such that the risk of flooding or stormwater damage is minimal.

As a minimum the level at the top of the transformer footing, HV and LV switchgear, shall not be lower than the 1:100 year flood level.

All drains within the substation site area or in the vicinity shall be properly maintained to avoid the possibility of water damage to Endeavour Energy's equipment.

In areas where, as determined by the Network Substation Manager, there is a high water table or a heightened risk of flooding, indoor substations will not be permitted.

All materials used in the construction below the substation (ground level) shall be capable of withstanding prolonged immersion in water without swelling or deterioration.



**Figure 51 - Example substation raised above 1:100 flood level**

### Earthing

The construction of any building or structure (including fencing, signage, flag poles, hoardings etc.) whether temporary or permanent that is connected to or in close proximity to Endeavour Energy's electrical network required to comply with Australian/New Zealand Standard AS/NZS 3000:2018 Electrical installations as updated from time to time. This Standard sets out requirements for the design, construction and verification of electrical installations, including ensuring there is adequate connection to the earth. It applies to all electrical installations including temporary buildings supply / connections.

Inadequate connection to the earth to allow a leaking / fault current to flow into the grounding system and be properly dissipated places persons, equipment connected to the network and the electricity network itself at risk from electric shock, fire and physical injury. The earthing system is usually in the form of an earth electrode consisting of earth rods or mats buried in the ground. It should be designed by a suitably qualified electrical engineer / ASP following a site-specific risk assessment having regard to the potential number of people could be simultaneously exposed, ground resistivity etc.

For details of the ASP scheme please refer to the above point Network Capacity / Connection .

### Location of Electricity Easements / Prudent Avoidance



#### Submissions from Public Authorities Endeavour Energy

The incorporation of electricity easements into privately owned lots is generally problematic for both Endeavour Energy and the future landowners and requires additional easement management to ensure no uncontrolled activities / encroachments occur within the easement area.

Accordingly Endeavour Energy's recommendation is that whenever reasonably possible, easements be entirely incorporated into public reserves and not burden private lots. Endeavour Energy's preference is to have continuity of its easements over the most direct and practicable route affecting the least number of lots as possible.

This is also in keeping with a policy of prudent avoidance. In practical terms this means that when designing new transmission and distribution facilities, consideration is given to reducing exposure and increasing separation distances to more sensitive uses such as residential or schools, pre-schools, day care centres or where potentially a greater number of people are regularly exposed for extended periods of time.

These emissions are usually not an issue but with Council's permitting or encouraging development with high density, reduced setbacks and increased building heights, but as the electricity network operates 24/7/365 (all day, every day of the year), the level of exposure can increase.

Endeavour Energy believes that irrespective of the zoning or land use, applicants (and Council) should also adopt a policy of prudent avoidance by the siting of more sensitive uses eg. the office component of an industrial building, away from and less susceptible uses such as garages, non-habitable or rooms not regularly occupied eg. storage areas in a commercial building, towards any electricity infrastructure including any possible future electricity infrastructure required to facilitate the proposed development.

Where development is proposed in the vicinity of electricity infrastructure, Endeavour Energy is not responsible for any amelioration measures for such emissions that may impact on the nearby proposed development.

Please find attached a copy of Energy Networks Association's Electric & Magnetic Fields What We Know which can also be accessed via their website at <https://www.energynetworks.com.au/electric-and-magnetic-fields> and provides the following advice:

*Electric fields are strongest closest to their source, and their strength diminishes rapidly as we move away from the source.*

*The level of a magnetic field depends on the amount of the current (measured in amps), and decreases rapidly once we move away from the source.*

Typical magnetic field measurements associated with Endeavour Energy's activities and assets given the required easement widths, safety clearances etc. and having a maximum voltage of 132,000 volt / 132 kV, will with the observance of these separation distances not exceed the recommended magnetic field public exposure limits.

#### Vegetation Management

The planting of large trees in the vicinity of electricity infrastructure is not supported by Endeavour Energy. Suitable planting needs to be undertaken in proximity of electricity infrastructure (including any new electricity infrastructure required to facilitate the proposed development). Larger trees should be planted well away from electricity infrastructure and even with underground cables, be installed with a root barrier around the root ball of the plant.

Landscaping that interferes with electricity infrastructure could become a potential safety risk, restrict access, reduce light levels from streetlights or result in the interruption of supply may become subject to Endeavour Energy's Vegetation Management program and/or the provisions of the Electricity Supply Act 1995 (NSW) Section 48 Interference with electricity works by trees by which under certain circumstances the cost of carrying such work may be recovered.

Submissions from Public Authorities Endeavour Energy

Dial Before You Dig

Before commencing any underground activity the applicant is required to obtain advice from the **Dial Before You Dig** service in accordance with the requirements of the Electricity Supply Act 1995 (NSW) and associated Regulations. This should be obtained by the applicant not only to identify the location of any underground electrical and other utility infrastructure across the site, but also to identify them as a hazard and to properly assess the risk.

Public Safety

Workers involved in work near electricity infrastructure run the risk of receiving an electric shock and causing substantial damage to plant and equipment. I have attached Endeavour Energy's public safety training resource which were developed to help general public / workers to understand why you may be at risk and what you can do to work safely. The public safety training resources are also available via Endeavour Energy's website via the following link:

[http://www.endeavourenergy.com.au/wps/wcm/connect/ee/nsw/nsw\\_homepage/communitynav/safety/safety\\_brochures](http://www.endeavourenergy.com.au/wps/wcm/connect/ee/nsw/nsw_homepage/communitynav/safety/safety_brochures)

If the applicant has any concerns over the proposed works in proximity of the Endeavour Energy's electricity infrastructure to the road verge / roadway, as part of a public safety initiative Endeavour Energy has set up an email account that is accessible by a range of stakeholders across the company in order to provide more effective lines of communication with the general public who may be undertaking construction activities in proximity of electricity infrastructure such as builders, construction industry workers etc. The email address is [Construction.Works@endeavourenergy.com.au](mailto:Construction.Works@endeavourenergy.com.au).

Emergency Contact

In case of an emergency relating to Endeavour Energy's electrical network, the applicant should note that Emergencies Telephone is 131 003 which can be contacted 24 hours/7 days. Endeavour Energy's contact details should be included in the any risk or safety management plan.

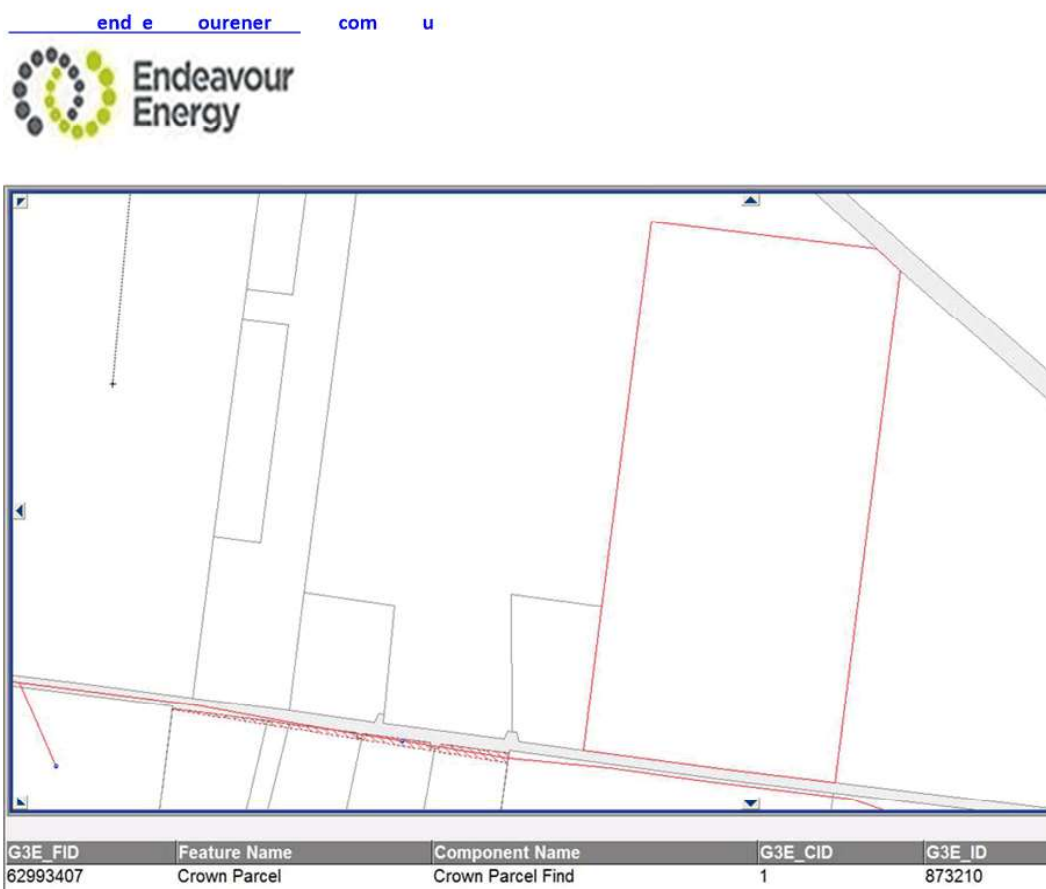
I appreciate that not all the foregoing issues may be directly or immediately relevant or significant to the Planning Proposal. However, Endeavour Energy's preference is to alert proponents / applicants of the potential matters that may arise should development within closer proximity of the existing and/or required electricity infrastructure needed to facilitate the proposed development on or in the vicinity of the site occur.

Could you please pass on a copy of this submission and the attached resources to the applicant? Should you wish to discuss this matter, or have any questions, please do not hesitate to contact me or the contacts identified above in relation to the various matters. Due to the high number of development application / planning proposal notifications submitted to Endeavour Energy, to ensure a response contact by email to [property.development@endeavourenergy.com.au](mailto:property.development@endeavourenergy.com.au) is preferred.

With the current COVID-19 health risk, as many as possible of Endeavour Energy staff are working from home. As a result there is only a small contingent located at the Huntingwood head office for essential operations. Although working from home, access to emails and other internal stakeholders is now somewhat limited and as a result it may take longer than usual to respond to enquiries. Thank you for your understanding during this time.

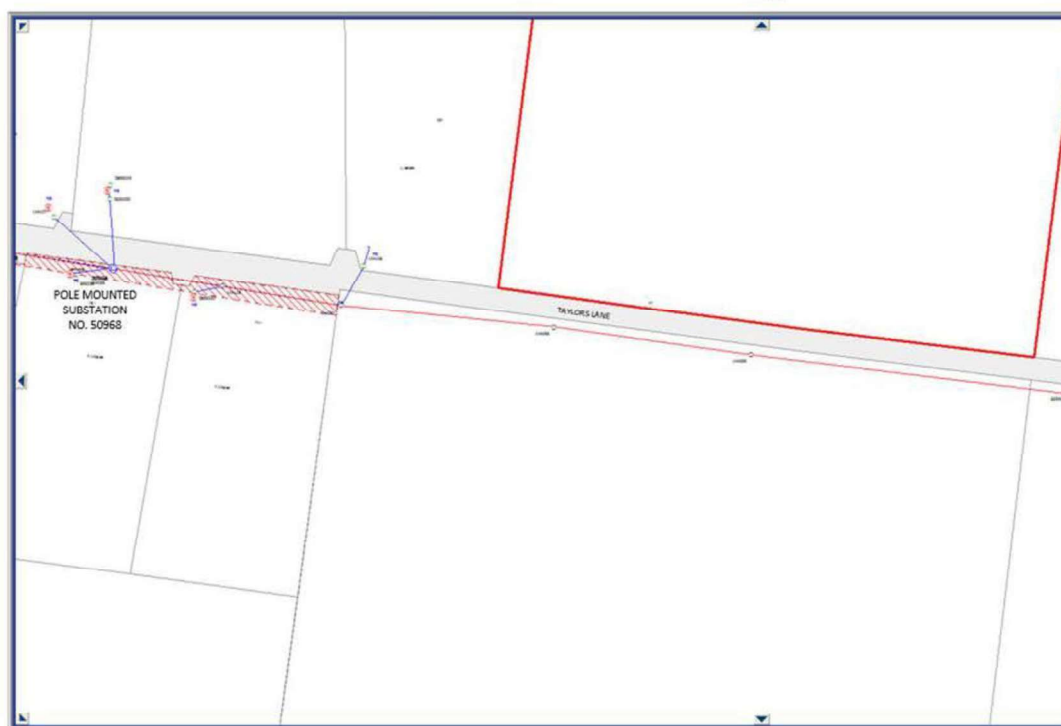
Yours faithfully  
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Submissions from Public Authorities Endeavour Energy



DE21.57 - Attachment 1

Submissions from Public Authorities Endeavour Energy



**From:** Kerrie Mackey <Kerrie.Mackey@shoalhaven.nsw.gov.au>

**Sent:** Wednesday, 5 August 2020 9:39 AM

**To:** Property Development <Property.Development@endeavourenergy.com.au>

**Subject:** Letter - Agency Consultation – Planning Proposal PP054 – Rezoning of Riparian Land at Taylors Lane, Cambewarra

Dear Sir/Madam,

Please find attached a letter and associated attachments seeking comments on Agency Consultation – Planning Proposal PP054 – Rezoning of Riparian Land at Taylors Lane, Cambewarra for your information.

If you have any questions relating to this matter, please contact Council's Strategic Planner Ryan Jameson on 0407 856 422 or via email [ryan.jameson@shoalhaven.nsw.gov.au](mailto:ryan.jameson@shoalhaven.nsw.gov.au).

Regards

**Kerrie Mackey**

**Senior Administration Officer – Strategic Planning**  
Shoalhaven City Council

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