

From: Cornelis Duba
Sent: Thu, 5 Nov 2020 05:44:00 +0000
To: Council Email
Cc: Maggie Chapman
Subject: Shoalhaven City Council Planning Proposal PP052 RE 10 Victoria Street, Berry
Attachments: ENA EMF What We Know.pdf, EE Safety Plumbing.pdf, EE Safety on the job.pdf, EE MDI0044 Easements and Property Tenure.pdf, EE FPJ 6007 Technical Review Request Aug 2019.pdf, SW08773 Work near underground assets.pdf

The General Manager
Shoalhaven Council

ATTENTION: Maggie Chapman, Strategic Planner

Dear Sir or Madam

I refer to Council's letter Council of 15 September 2020 regarding Planning Proposal PP052 at 10 Victoria Street, Berry (Lot 6 DP 1204186) to rezone an area of approximately 7,665 m² to R2 – Low Density Residential to allow the residential use of the land for seniors housing. The land is currently zoned RU1 - Primary Production under the Shoalhaven Local Environmental Plan (LEP) 2014. Submissions need to be made to Council by 4 December 2020.

As shown in the below site plans from Endeavour Energy's G/Net master facility model (and extract from Google Maps Street View) in regard to the 'Subject Land' there are:

- No easements benefitting Endeavour Energy (active easements are indicated by red hatching).
- Low voltage and 11,000 volt / 11 kilovolt (kV) high voltage underground cables to the road verge / roadway.
- No existing low voltage service conductor or customer connection point to the site.

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

- Network Capacity / Connection

Endeavour Energy has noted that the Planning Proposal is supported by a Flood Management & Site Servicing for Planning Proposal which includes the following advice regarding the suitability of the site for the development in regard to whether utility services are available and adequate for the development.

4.4 Proposed Electrical Infrastructure

The proposed point of connection for the site is from the HV cables in Victoria Street. Preliminary power demand has been estimated in table below based on the 'Technical Bulletin 0188A – Changes to MDI0030 ADMD Schedule' issued by Endeavour Energy.

Table 4-2: Power Demand Calculation.

Description	ADMD (kVA)/Lot	Load (A/Phase)
10x Dwellings - Urban	6.5	104
Street Lighting	Allow for 30% Load	32
Total		136



The proposed connection will be subject to approval from Endeavour Energy assuming there is sufficient capacity in the pad-mount substation located to the east within Lot 1008 DP1107175.

A new substation will be required to supply power to this development if Endeavour Energy determines the current electrical infrastructure in Victoria and in the adjacent Lot 1008 DP1107175 to be under capacity.

The availability of electricity supply to a site is based on a wide range of factors eg. the age and design of the network; other development in the locality utilising previously spare capacity within the local network; the progress of nearby / surrounding sites including electricity

infrastructure works eg. a smaller and isolated development that may not of its own accord require a substation may require a substation to facilitate the development and from which the spare capacity is made available to subsequent nearby development.

Distribution substations are required to transform the high voltage of the distribution feeder (usually at 11,000 volts / 11 kV) to the secondary system voltage (400/230 volts) to supply customers / developments. Distribution substations are divided into ground mounted substations most commonly being a padmount substations installed a complete unit on a concrete foundation / plinth and usually associated with underground distribution and pole mounted substations where there is overhead distribution.

Pole mounted substations (indicated by the symbol  on the site plan from Endeavour Energy's G/Net master facility model) have comparatively limited capacity of 25 kilovolt amperes (kVA) up to a maximum of 400 kVA. Padmount substations (indicated by the symbol  on the site plan from Endeavour Energy's G/Net master facility model) can accommodate loads from 315 kVA up to 1,500 kVA (typically 500 kVA). Accordingly there is a significant variation in the number and type of premises able to be connected to a substation ie. a single distribution substation may serve one large building, or many homes.

As shown in the below site plan from Endeavour Energy's G/Net master facility model, whilst there are a number of distribution substations in proximity of the site which are likely to have some spare capacity, it may not be sufficient to facilitate the proposed development. As well as the capacity of distribution substations, other factors such as the size and rating / load on the conductors and voltage drop (which can affect the quality of supply particularly with long conductor runs) etc. need to be assessed.

Accordingly an extension and / or augmentation of the existing local network may be required. However the extent of the works will not be determined until the final load assessment is completed. Endeavour Energy's preference is to alert proponents / applicants (and Council) of the potential matters that may arise as further development of areas continues to occur.

In due course the applicant for the proposed development of the site will need to submit an appropriate application based on the maximum demand for electricity 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. Straightforward applications can be completed online and permission to connect may be provided immediately if submitting a complying application.

Depending on the outcome of the assessment, any required padmount or indoor / chamber 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 refer to Endeavour Energy's Mains Design Instruction MDI 0044 'Easements and Property Tenure Rights'.

For more complex connections, 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. 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.

Further details are available by contacting Endeavour Energy's Network Connections Branch via Head Office enquiries on business days 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/> .

Alternatively the applicant may need to engage an Accredited Service Provider (ASP) of an appropriate level and class of accreditation to assess the electricity load and the proposed method of supply for the development. The ASP scheme is administered by Energy NSW and details are available on their website via the following link or telephone 13 77 88:

<https://energy.nsw.gov.au/government-and-regulation/legislative-and-regulatory-requirements/asp-scheme-and-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 treed² 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.

² 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

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.

- Bushfire

Endeavour Energy has noted that in the Planning Proposal S9.1 Ministerial Direction Checklist that Planning for Bushfire Protection is Applicable, Relevant and Consistent.

NSW Rural Fire Service ‘Planning for Bush Fire Protection 2019’ provides the following advice regarding electricity services for bushfire prone land:

5.3.3 Services – Water, electricity and gas

Intent of measures: *to provide adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building.*

Table 5.3c

Performance criteria and acceptable solutions for water, electricity and gas services for residential and rural residential subdivisions.

	PERFORMANCE CRITERIA	ACCEPTABLE SOLUTIONS
	The intent may be achieved where:	
ELECTRICITY SERVICES	<ul style="list-style-type: none"> ➤ location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings. 	<ul style="list-style-type: none"> ➤ where practicable, electrical transmission lines are underground; ➤ where overhead, electrical transmission lines are proposed as follows: <ul style="list-style-type: none"> ➤ lines are installed with short pole spacing of 30m, unless crossing gullies, gorges or riparian areas; and ➤ no part of a tree is closer to a power line than the distance set out in <i>ISSC3 Guideline for Managing Vegetation Near Power Lines</i>.

The following is an extract of Endeavour Energy’s Company Policy 9.1.1 Bushfire Risk Management:

9.1.1 BUSHFIRE RISK MANAGEMENT

1.0 POLICY STATEMENT

The company is committed to the application of prudent asset management strategies to reduce the risk of bushfires caused by network assets and aerial consumer mains to as low as reasonably practicable (ALARP) level. The company is also committed to mitigating the associated risk to network assets and customer supply reliability during times of bushfire whilst achieving practical safety, reliability, quality of supply, efficient investment and environmental outcomes. The company is committed to compliance with relevant acts, regulations and codes.

Accordingly the electricity network required to service the proposed development must 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 connection / infrastructure for a bushfire prone site. In assessing bushfire risk, Endeavour Energy has traditionally focused on the likelihood of its network starting a bushfire, which is a function of the condition of the network. Risk control has focused on reducing the likelihood of fire ignition by implementing good design and maintenance practices. However the potential impact of a bushfire on its electricity infrastructure and the safety risks associated with the loss of electricity supply are also considered.

- Flooding and Drainage

Endeavour Energy has noted that in the Planning Proposal S9.1 Ministerial Direction Checklist that Flood Prone Land is not Applicable, Relevant and Consistent. However the Flood Management & Site Servicing for Planning Proposal includes the following advice.

2. FLOODING

A flood certificate has been previously issued by Shoalhaven City Council dated 11th December 2018, stating that Lot 6 DP1204186 is affected by the 1% AEP flood event. As such, flood planning measurements must be carried out in accordance with Shoalhaven City Council DCP Chapter G9: Development on Flood Prone Land.

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 connection / 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's Mains Construction Instruction MCI 0006 'Underground distribution construction standards manual' provides the following details of the requirements for flooding and drainage in new padmount substation locations.

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 is 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 builder's 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'.

- Prudent Avoidance

The electricity industry has adopted a policy of prudent avoidance by doing what can be done without undue inconvenience and at modest expense to avert the possible risk to health from exposure to emissions from electricity infrastructure such as electric and magnetic fields (EMF) and noise which generally increase the higher the voltage ie. Endeavour Energy's network ranges from low voltage (normally not exceeding 1,000 volts) to high voltage (normally exceeding 1,000 volts but not exceeding 132,000 volts / 132 kV).

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 higher 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 near 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.

Endeavour Energy has noted that the DA Acoustic Report indicates that one of the purposes of the report is to 'Mechanical plant noise breakout goal for future detailed design'. In this regard appropriate consideration should also be provided to existing padmount substation no. 34140 as well as any augmentation thereto or other electricity infrastructure required on site to facilitate the proposed development.

- Vegetation Management

The planting of large trees near 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). Only low growing shrubs not exceeding 3.0 metres in height, ground covers and smaller shrubs, with non-invasive root systems are the best plants to use. Larger trees should be planted well away from electricity infrastructure (at least the same distance from overhead power lines as their potential full grown height) 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 out such work may be recovered.

- Dial Before You Dig

Before commencing any underground activity the applicant is required to obtain advice from the **Dial Before You Dig 1100** 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.

- Asbestos

Endeavour Energy's G/Net master facility model indicates that the site is in an area identified or suspected of having asbestos or asbestos containing materials (ACM) present in the electricity network. Whilst Endeavour Energy's underground detail is not complete within G/Net in some areas, in older communities, cement piping was regularly used for the electricity distribution system and in some instances containing asbestos to strengthen the pipe; for insulation; lightness and cost saving.

When undertaking works on or in the vicinity of Endeavour Energy's electricity network, asbestos or ACM must be identified by a competent person employed by or contracted to the applicant and an asbestos management plan, including its proper disposal, is required whenever construction works has the potential to impact asbestos or ACM.

The company's potential locations of asbestos to which construction / electricity workers could be exposed include:

- o customer meter boards;
- o conduits in ground;
- o padmount substation culvert end panels; and
- o joint connection boxes and connection pits.

Further details are available by contacting Endeavour Energy's Health, Safety & Environment Assurance Section via Head Office enquiries on business days on telephone: 133 718 or (02) 9853 6666 from 9am - 4:30pm.

- 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 resources, 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>.

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.

- Emergency Contact

In case of an emergency relating to Endeavour Energy's electrical network, the applicant should note the 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 ie. if a padmount substation is not required on site. 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 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

Cornelis Duba

Development Application Specialist

Network Environment & Assessment

M: 0455 250 981

E: cornelis.duba@endeavourenergy.com.au


51 Huntingwood Drive, Huntingwood NSW 2148

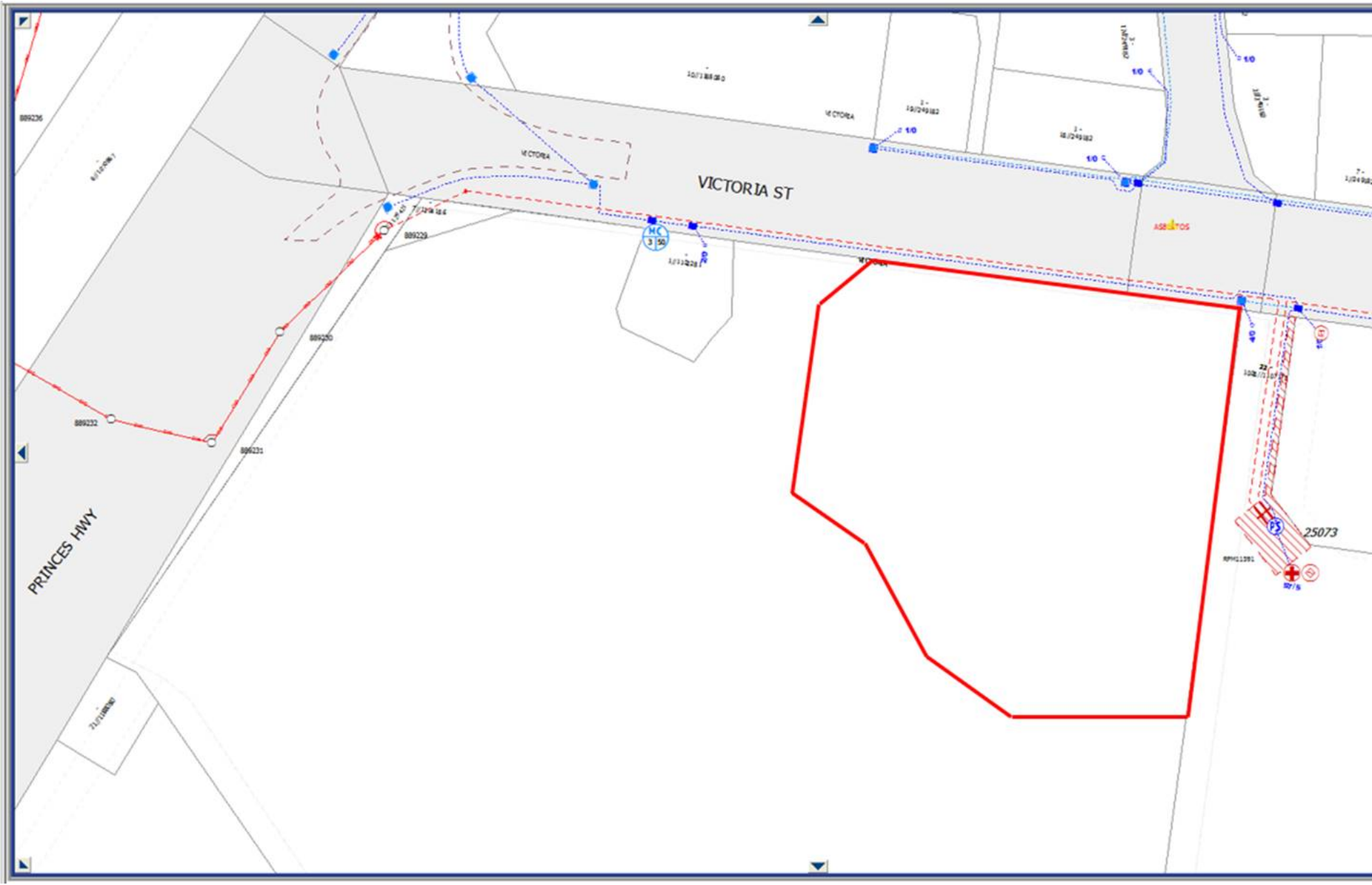
www.endeavourenergy.com.au





Legend

 Subject Land



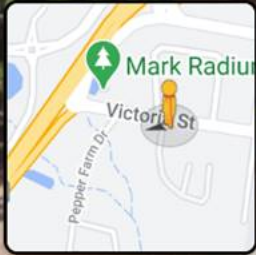
7 Victoria St
Berry, New South Wales

Google

Street View

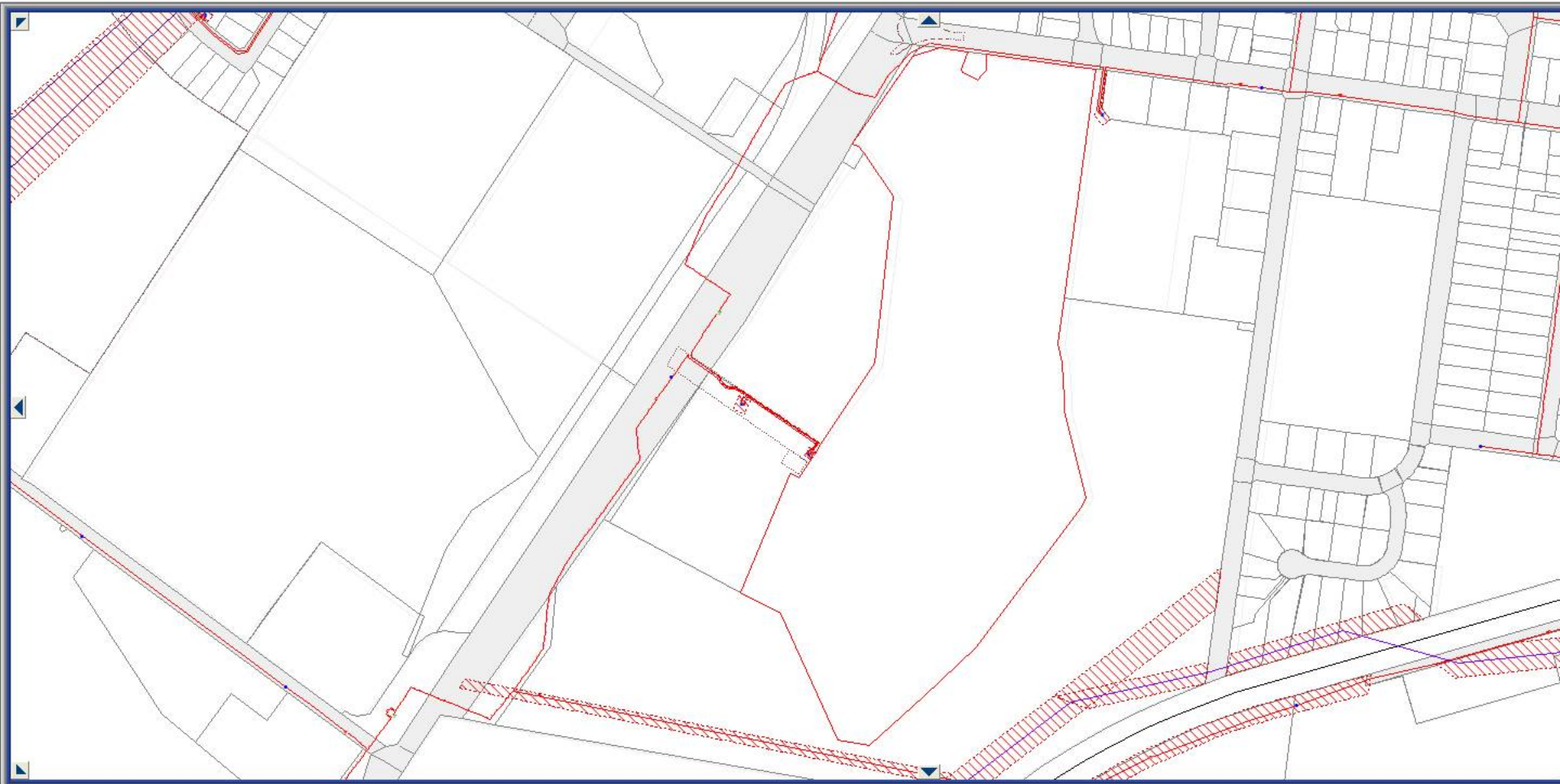
THE GRANGE

The Grange at Berry
Boutique Over 55's Estate
1800 005 922



OPEN FOR INSPECTION
←

Google



G3E_FID
80830665

Feature Name
Crown Parcel

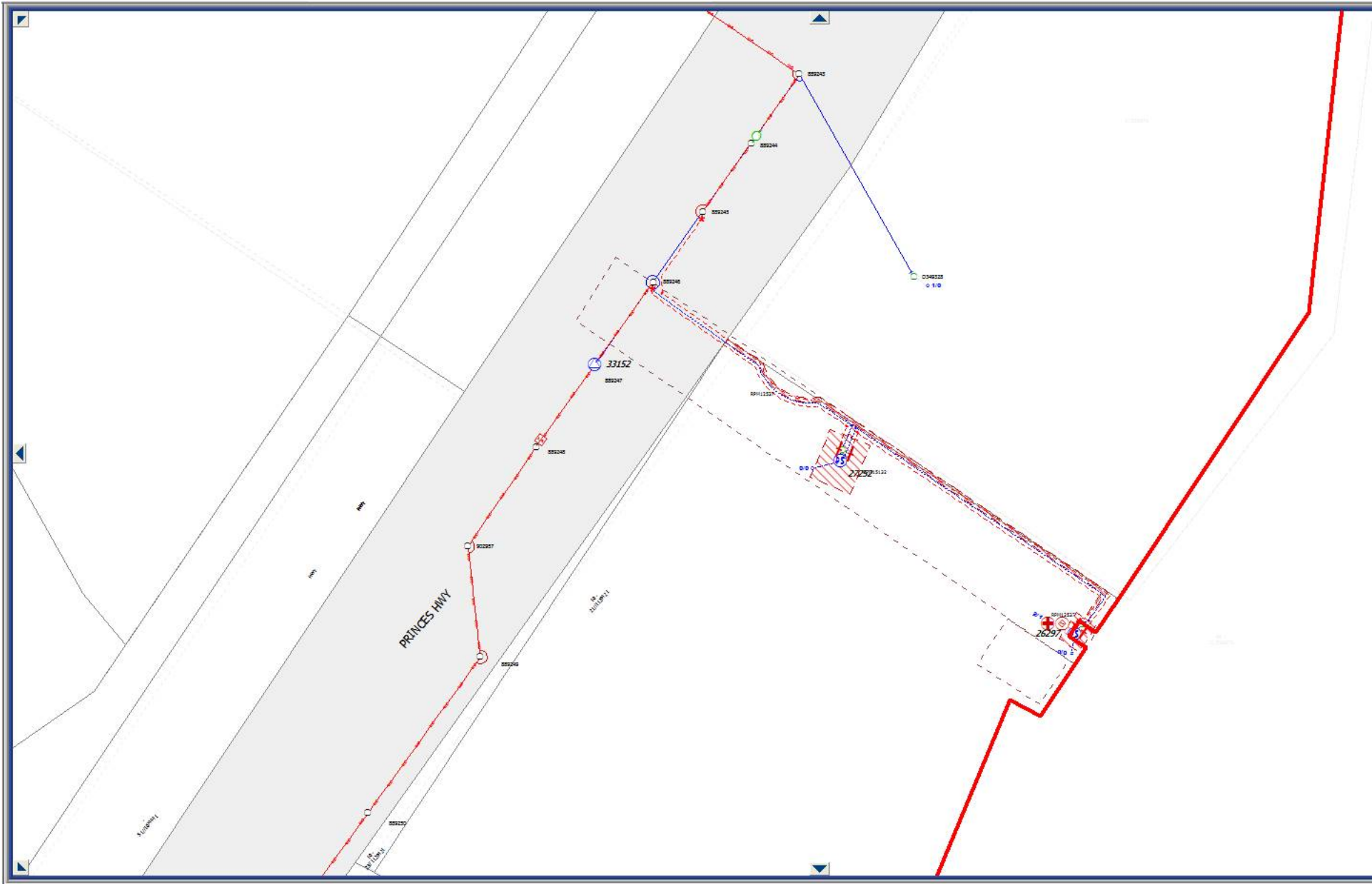
Component Name
Crown Parcel Find

G3E_CID
1

G3E_ID
2264138

LOT
6

SECTION



Princes Hwy

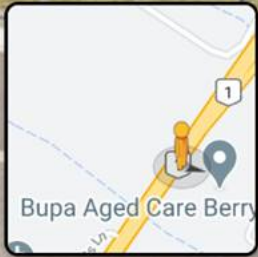
Berry, New South Wales



Google



Street View



Bupa Aged Care Berry

Google

Image capture: Jul 2019 © 2020 Google

From: Kerrie Mackey <Kerrie.Mackey@shoalhaven.nsw.gov.au>
Sent: Tuesday, 3 November 2020 12:04 PM
To: Property Development <Property.Development@endeavourenergy.com.au>
Cc: Eric Hollinger <Eric.Hollinger@shoalhaven.nsw.gov.au>
Subject: Amended Letter - Agency Consultation - Public Exhibition - Planning Proposal (PP052) ~ Endeavour Energy

Dear Sir/Madam,

Please find attached a letter advising of a Public Exhibition - Planning Proposal (PP052) – 10 Victoria Street, Berry 'The Arbour Retirement Village' for your information.

If you have any questions relating to this matter, please contact Council's Strategic Planner Maggie Chapman at maggie.chapman@shoalhaven.nsw.gov.au or Eric Hollinger on 0409 256 192 or eric.hollinger@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

RESPECT | INTEGRITY | ADAPTABILITY | COLLABORATION

This message may contain both confidential and privileged information intended only for the addressee named above.

If you have received this email in error, please notify the sender immediately then destroy the original message.

