

The Secretary
NSW Department of Planning, Industry and Environment


14 December 2020

ATTENTION: Chris Fraser

Dear Sir or Madam

I refer to the Department's letter of 26 November 2020 regarding the exhibition of State Significant Development SSD-7228-Mod-7 for Sydney Zoo - Modification 7 - Amendments to hours of operation and events. Modification to: increase the operational hours for temporary and community events to allow events to occur between 7am and 11pm all year round; remove the limitation on the number of temporary and community events per calendar year located at 700 Great Western Highway, Bungarribee NSW 2767 (Lot 11 DP 1247378) in the Blacktown local government area (LGA). Submissions need to be made to the Department by 14 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) there are:

- Easements and restrictions benefitting Endeavour Energy (indicated by red hatching) for low voltage and 11,000 volt / 11 kilovolt high voltage underground cables (with the low voltage exiting the easement and going to a low voltage pillar and the 11 kV continuing in the easement across adjoining Lot 1 DP 1257455 to the Great Western Highway) and padmount substations no.s 36048, 36049 and 36050 (indicated by the symbol ).
- Is in the vicinity of Endeavour Energy's:
 - Huntingwood Zone Substation at Brabham Drive Eastern Creek (Lot 20DP 1111530); and
 - Huntingwood Head Office at 51 Huntingwood Drive Huntingwood (Lot 1 DP 857249).

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).

Please find attached a copy of Endeavour Energy's submission made to the then NSW Planning & Environment regarding SSD 7228 Notice of Exhibition for Sydney Zoo, Blacktown LGA (Part of Lot 101 in DP 1195067) for 'the construction and operation of a new zoological facility within the Western Sydney Parklands over an area of around 16.5 hectares. The proposed development includes animal exhibits, restaurants and cafes, show arena, picnic areas, waterways and car-parking. Notwithstanding the proposed modification the recommendations and comments provided therein remain valid.

Subject to the foregoing and the following additional recommendations and comments Endeavour Energy has no objection to the Development Application.

- Easement Management / Network Access

The following is a summary of the usual / main terms of Endeavour Energy's electrical easements requiring that the landowner:

- Not install or permit to be installed any services or structures within the easement site.
- Not alter the surface level of the easement site.
- Not do or permit to be done anything that restricts access to the easement site without the prior written permission of Endeavour Energy and in accordance with such conditions as Endeavour Energy may reasonably impose.

Endeavour Energy's preference is for no activities or encroachments to occur within its easements. Most activities are prohibited in easements for padmount substations. However, if any proposed works (other than those approved / certified by Endeavour Energy's Network Connections Branch as part of an enquiry / application for load or asset relocation project) will encroach / affect Endeavour Energy's easements or protected assets, contact must first be made with the Endeavour Energy's Easements Officer, Jeffrey Smith, on business days on direct telephone 9853 7139 or alternately email Jeffrey.Smith@endeavourenergy.com.au or Easements@endeavourenergy.com.au.

Please find attached for the applicant's reference copies of Endeavour Energy's:

- Mains Design Instruction MDI 0044 'Easements and Property Tenure Rights' which deals with activities / encroachments within easements.
- General Restrictions for Underground Cables.
- Guide to Fencing, Retaining Walls and Maintenance Around Padmount Substations.

It is imperative that the access to the existing electrical infrastructure on and in proximity of the site be maintained at all times. To ensure that supply electricity is available to the community, access to the electricity infrastructure may be required at any time. Restricted access to electricity infrastructure by maintenance workers causes delays in power restoration and may have severe consequences in the event of an emergency.

- 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.

- 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 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.

- Public Safety

A hazard and risk assessment / controls for the electricity infrastructure on the site and to be used during the events should be completed. It should address both the electrical equipment to be used for the event as a hazard or risk source ie. the temporary electrical installations required for the event as well as the electrical infrastructure on or near the site as well.

The following is an examples of a Hazard and Risk Register / Assessment Control Checklist provided as part of a development applications for the similar holding of community events which may be of assistance to the applicant.

Hazard	Risks	Existing Risk Controls	Risk Rating	Tolerance of existing Risk Controls	Additional Risk Treatment or Action Plan	Risk Rating	Responsible to Monitor/Supervise
25 Live electrical wires or faulty equipment	➢Electrocution hazard to patrons or performers	➢All electric's to be installed in accordance with appropriate regulations ➢All electrical installations by qualified contractors ➢Leads and appliances to be tagged and tested ➢Earth leakage protection to be fitted and tested ➢Switchboards are to be identified with signage "Danger – High Voltage" ➢Switchboards to be mounted off the ground and inaccessible to public ➢Temporary installations to run overhead where possible ➢Regular inspections by Area Wardens	E3 Medium	ALARP			➢Management ➢Event Electrician ➢Performers ➢Caterers & Vendors ➢Area Wardens
44 Substation failure	➢Panic and injury	➢Emergency lighting installed where necessary and tested on a regular basis. Test results recorded in maintenance schedule. ➢Area wardens trained to respond to emergency ➢Illuminated exit signage installed where required ➢Substation loads assessed ➢Thermostatic testing undertaken prior to event as deemed necessary by power supplier ➢Management of threat in accordance with Safety Management Plan	E3 Medium	ALARP			➢Management ➢Stakeholders ➢Area Wardens

Festival Risk Register V2 13.05.15

Risk ID	Hazard or Risk Source	Risks – What can go wrong?	Factors which could contribute to an incident occurring	Likelihood A to E	Degree of Harm 1-5	Risk Level (Inherent)	State of Knowledge – What information is available or can be obtained on this risk?	Risk Controls - What can reasonably be done?	Risk Level Residual	Risk Owners
17	Electrical Equipment	•Fire •Burn •Electric shock •Electrocution	•Overloading of power distribution •Faulty equipment (un-tested) •Unauthorized access to power •Unauthorized repairs to equipment •Inadequate water proofing •Inadequate cable protection	E Rare	5 Death	E5 High Risk	•COP – Managing Electrical Risks •VHS Regulation 2011 •AS/NZS 3760	•Festival site electrician engaged •Power distribution map developed & loads calculated •Cabling on ground protected with cable trays •Generators/distro isolated from general public •All equipment must have current test tag •All power supplies must have operable RCD •Staging/cattailing structures to be earthed •Inspection of electrical system prior to use	E4 Medium Risk	ODA, Supplier Electrician

- 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 any relevant risk and safety management plan.

I appreciate that not all the foregoing issues may be directly or immediately relevant or significant to the Development Application. 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 easing of the current COVID-19 health risk, whilst a significant number of Endeavour Energy staff are returning to the office they are at times still working from home. Although working from home, access to emails and other internal stakeholders can still be somewhat limited and as a result it may take longer than usual to respond to enquiries. Thank you for your ongoing understanding during this time.

Yours faithfully

Cornelis Duba

Development Application Specialist

Network Environment & Assessment

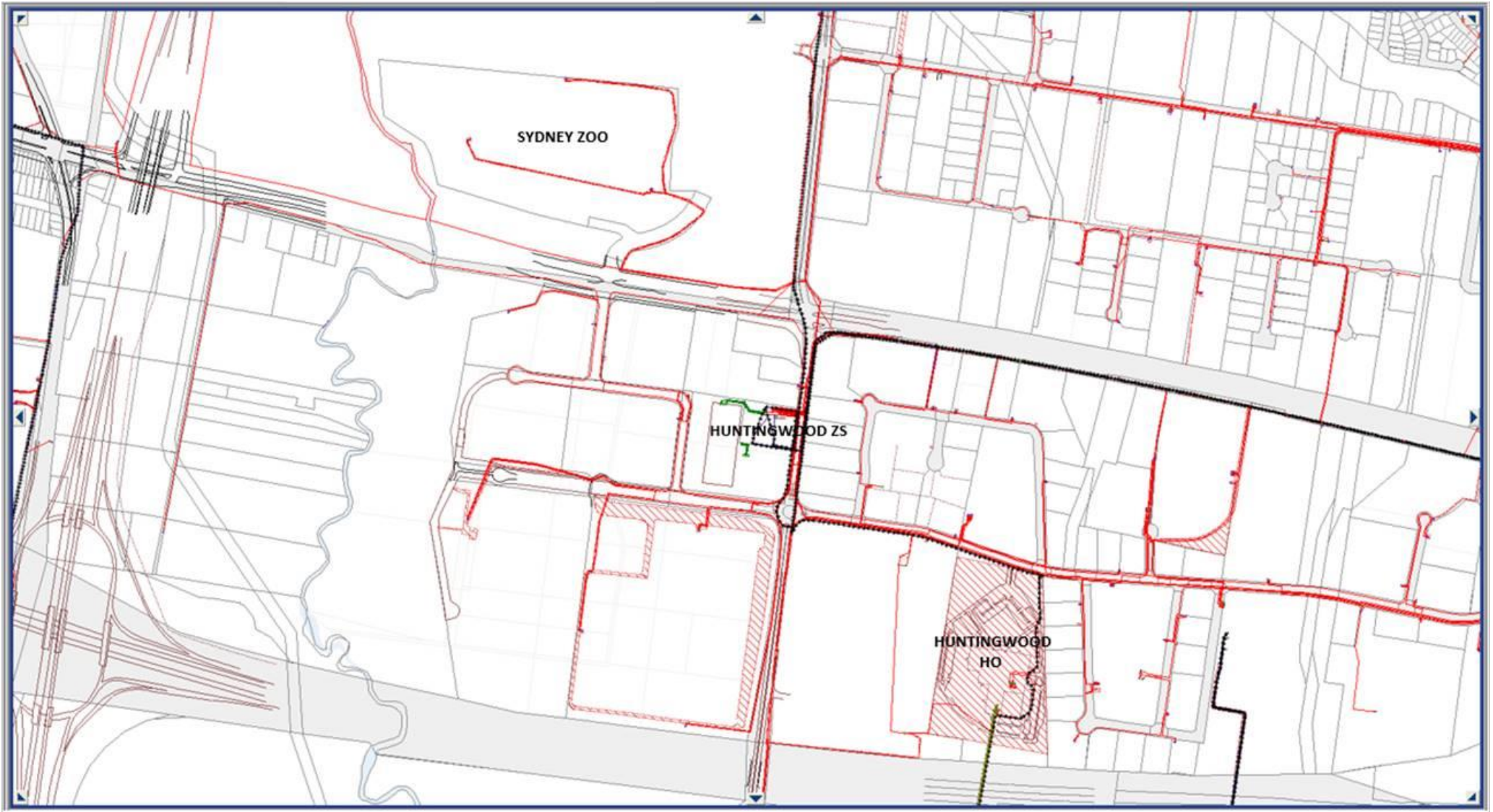
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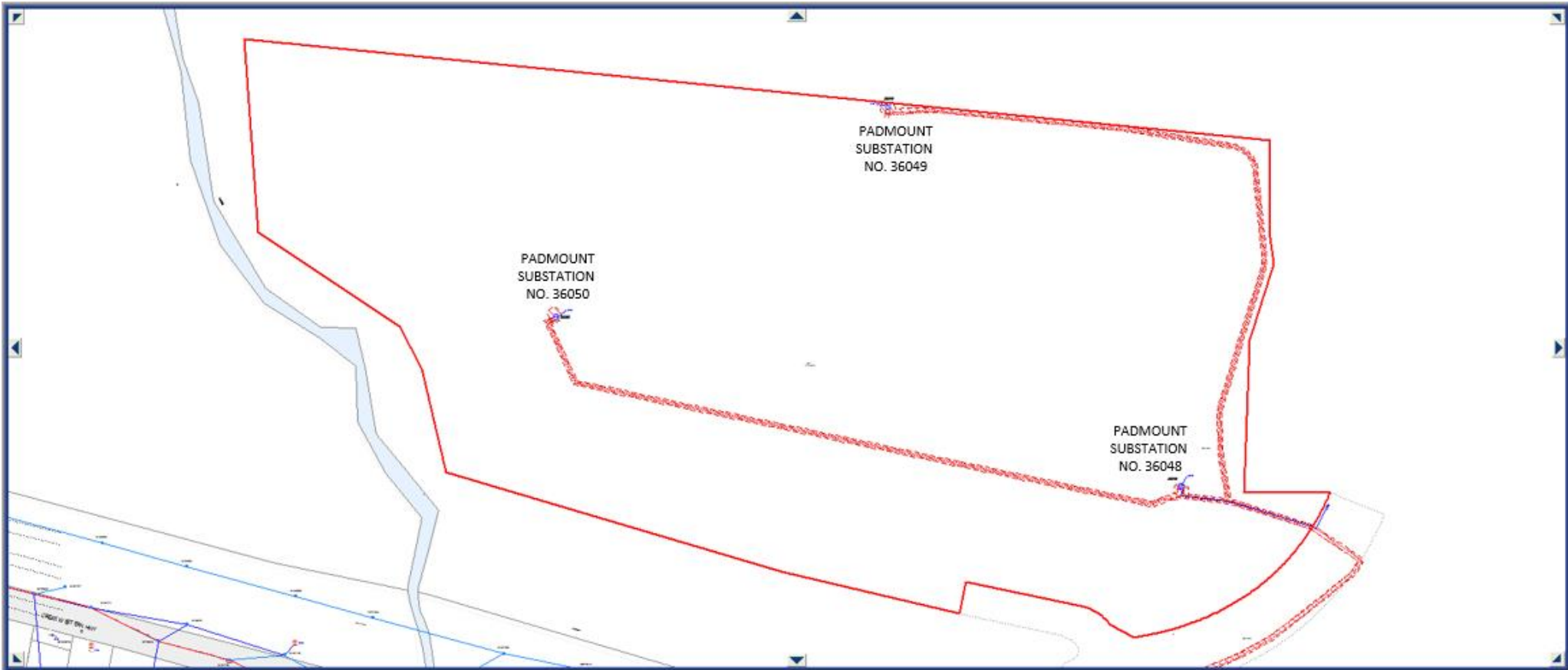
E: cornelis.duba@endeavourenergy.com.au

51 Huntingwood Drive, Huntingwood NSW 2148

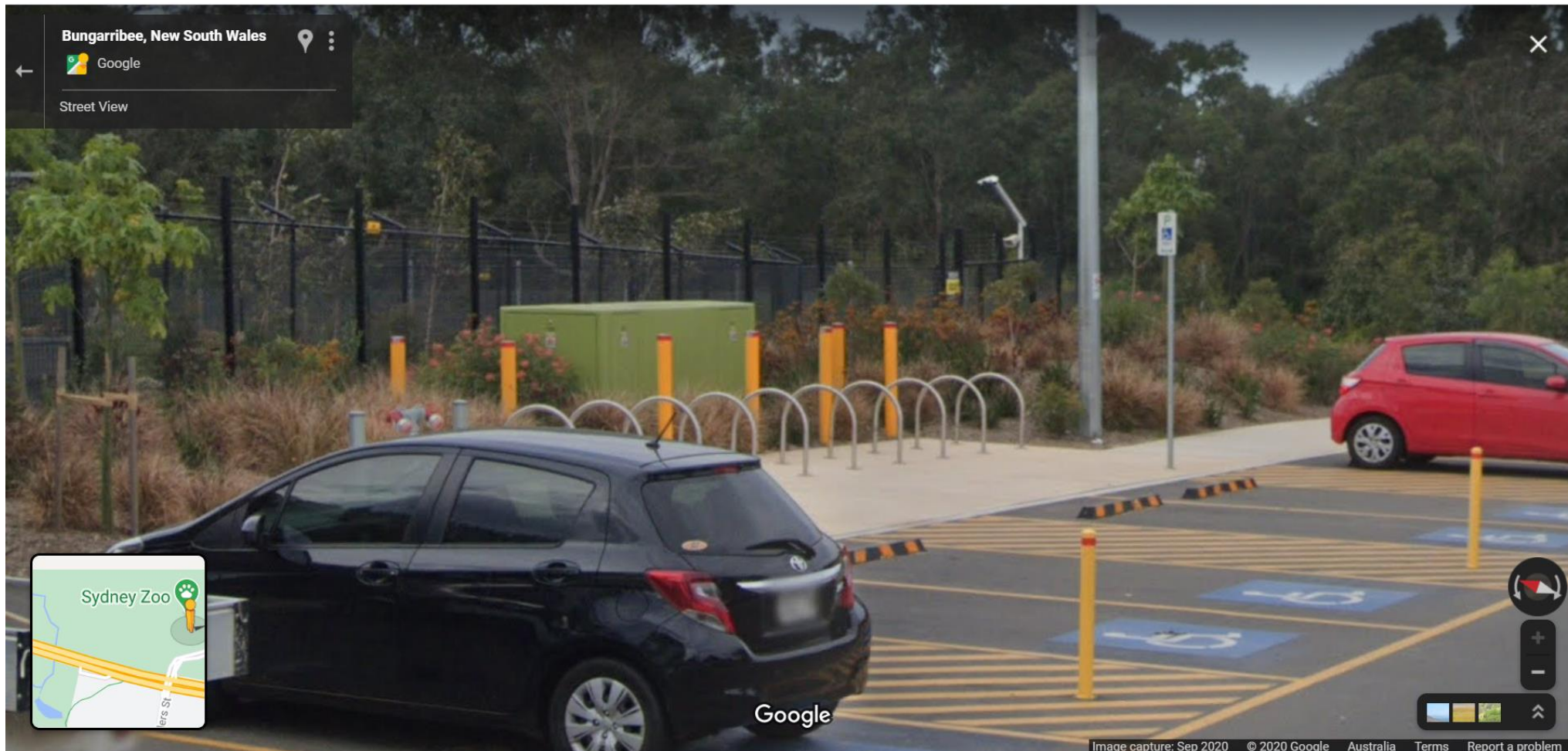
www.endeavourenergy.com.au







G3E_FID	Feature Name	Component Name	G3E_CID	G3E_ID	LOT	SECTION	DP
81601383	Crown Parcel	Crown Parcel Find	1	2313332	11		1247378



PADMOUNT SUBSTATION NO. 36048.

From: Cornelis Duba

Sent: Tuesday, 2 February 2016 10:40 AM

To: 'information@planning.nsw.gov.au' <information@planning.nsw.gov.au>

Subject: NSW Planning & Environment - Notice of Exhibition Sydney Zoo (SSD 7228) Western Sydney Parklands

The Secretary

NSW Planning & Environment

ATTENTION: Kate MacDonald, Team Leader Industry Assessments

Dear Sir or Madam

I refer to the Department's letter regarding SSD 7228 Notice of Exhibition for Sydney Zoo, Blacktown LGA (Part of Lot 101 in DP 1195067) for 'the construction and operation of a new zoological facility within the Western Sydney Parklands over an area of around 16.5 hectares. The proposed development includes animal exhibits, restaurants and cafes, show arena, picnic areas, waterways and car-parking.' Submissions need to be made by 1 February 2016. I apologise for the late submission but trust that Endeavour Energy's recommendations and comments can still be considered.

As indicated in the Department's letter 'You are being notified of the proposal as you have been identified as a nearby landowner/occupier'. As shown in the below site plans from Endeavour Energy's G/Net master facility model (please note this is not a 'Dial Before You Dig' plan) the proposed development is in the vicinity of Endeavour Energy's following sites:

- Huntingwood Zone Substation at Brabham Drive Eastern Creek (Lot 20DP 1111530); and
- Huntingwood Head Office at 51 Huntingwood Drive Huntingwood (Lot 1 DP 857249).

The plan also indicates there are no easements over or adjoining the site benefitting Endeavour Energy (which is shown by red hatching) but there is significant electricity infrastructure in the vicinity of the property.

As a nearby landowner/occupier Endeavour Energy has no objections to the proposed development. From an electricity transmission or distribution networks perspective its recommendations and comments are as follows:

- Network Capacity / Connection

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 or indoor / chamber substations 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 benefitting and gifted to Endeavour Energy. Please find attached for the applicant's reference is 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 8am - 5:30pm.

In this regard endeavour Energy has noted the following section in the Environmental Impact Statement :

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3.9.4 Electricity

The nearest zone substation to the Zoo site is the New Huntingwood electrical zone substation. It is expected this substation will be utilised to service the Zoo.

Major existing electrical services currently located near to the proposed Zoo site are:

- 11kV on the southern side of the Great Western Highway;
- 11kV along Doonside Rd; and
- overhead 132 kV running down Doonside Road.

WSPT is responsible for the provision of these services to the Sydney Zoo boundary.

The Preliminary Environmental Assessment Report states that a new sub station is to be provided. The Proponent is requested to consult with the energy provider. The location and details of the substation are requested to be nominated on the plans.	A new electricity kiosk will need to be provided near the entrance of the site, subject to requirements of electricity supply authority. This is the responsibility of the AUSPT.
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- Network Access

It is imperative that the access to the existing electrical infrastructure on and adjacent to the site is maintained at all times. To ensure that supply electricity is available to the community, access to the electrical assets may be required at any time.

- Public Safety

For work near electricity infrastructure, workers run the risk of receiving an electric shock and causing substantial damage to plant and equipment. 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. Please find attached some of the available safety training resources which 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>

Could you please pass on the attached resources to the applicant / developer? Should you wish to discuss this matter, or have any questions, please do not hesitate to contact me. As I am working across the company's franchise area, to ensure a response contact by email is preferred.

Yours faithfully

Cornelis Duba

Acting Public Safety Advisor

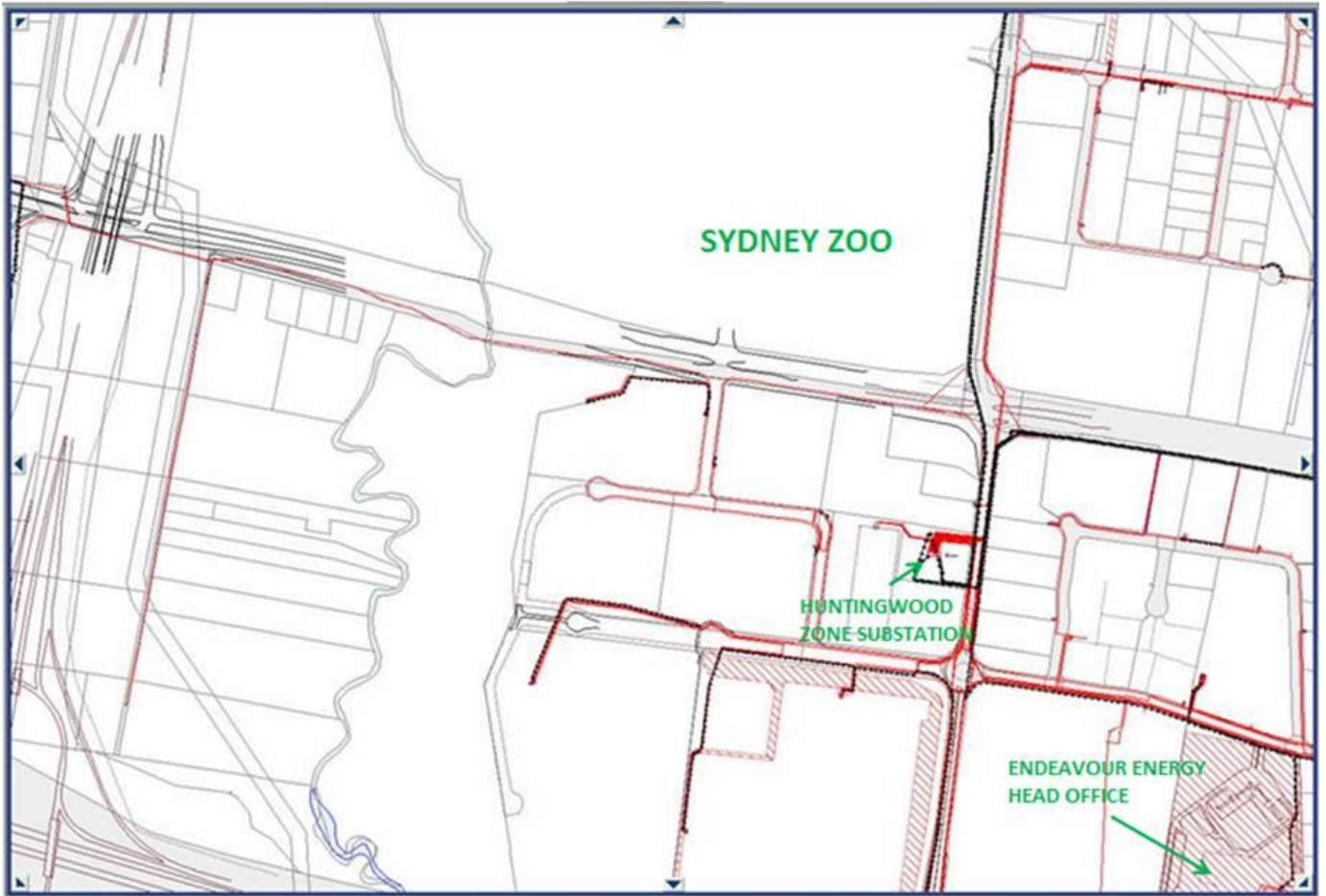
T: 9853 7896

E: cornelis.duba@endeavourenergy.com.au

51 Huntingwood Drive, Huntingwood NSW 2148

www.endeavourenergy.com.au





Southern End – Great Western Highway