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To: **FRASERS PROPERTY**

Project: **KEYHOLE SITE – THE HORSLEY DRIVE, HORSLEY PARK**

Our Ref: **SY073931.001**

Date: **APRIL 2021**

ABN 19 118 146 008 | sydney@landpartners.com.au |

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Revision:

Issue	Date	Comment
A	03/2021	For Client comment
B	04/2021	Endeavour Energy update
C	05/2021	Sydney Water response

1.0 INTRODUCTION

Frasers Property Industrial is preparing to lodge a planning proposal to rezone certain lands at Horsley Park currently zoned RU2 (Rural Landscape) to employment-based lands.

A Service Infrastructure Assessment of public utility services has been prepared to assist in the assessment of that planning proposal. The Fairfield City Local Strategic Planning Statement 2040, Section 6.9, outlines a planning framework for future infrastructure needs to be considered. Whilst this is outlined in the context of the Horsley Park and Mount Vernon release areas, the concept associated with the planning proposal for the Horsley Park area would be consistent with the 6.9 objective.

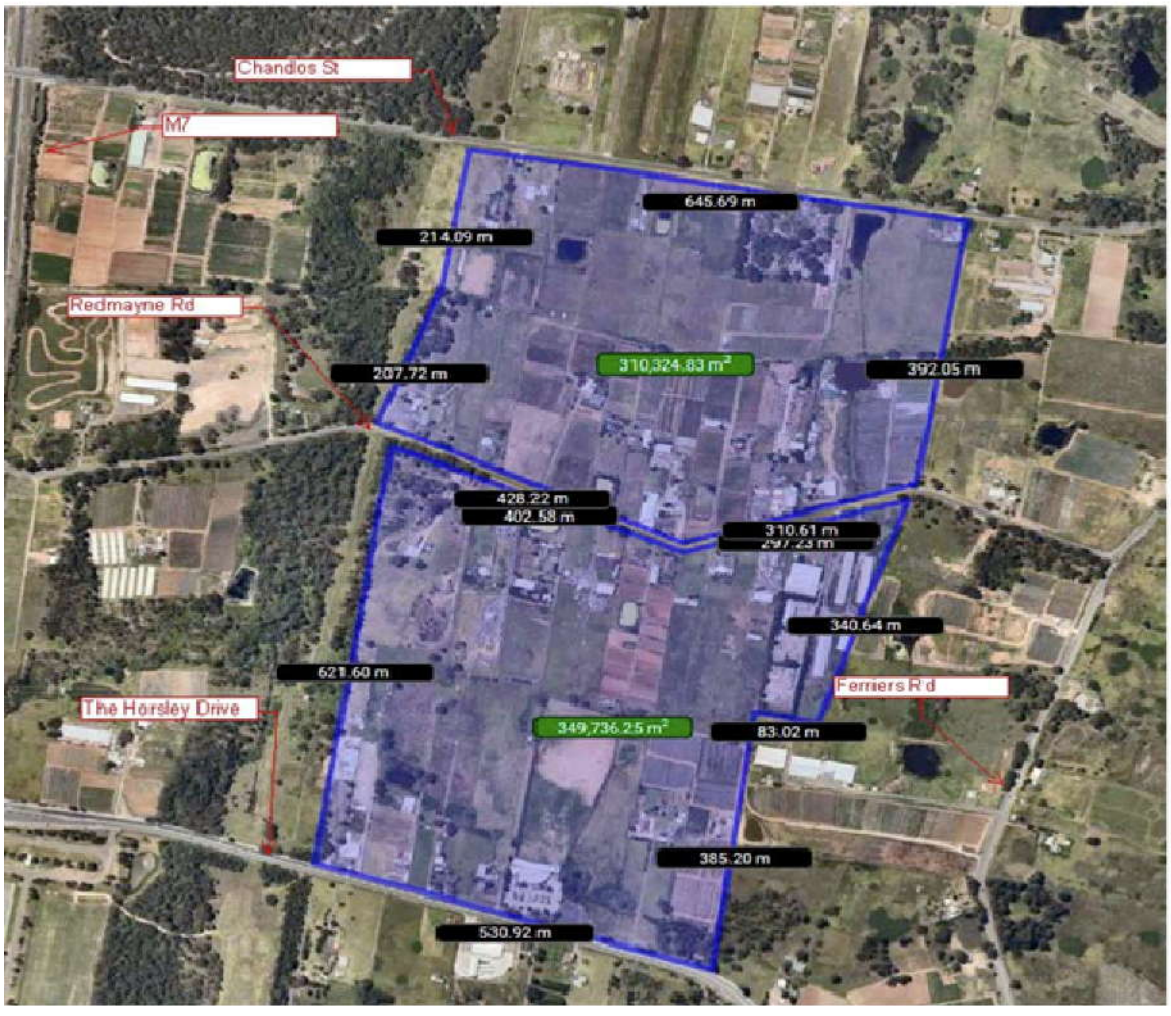
The purpose of the assessment is to consider the impact of service asset capacity on future possible development of the site for industrial purposes. The particular industrial uses of the site is assumed to be for warehouse/logistics facilities.

1.1 THE SITE

The site is bounded by The Horsley Drive to the south, Chandos Road to the north and small lot acreage land on the east and west of the site. The site is bisected by Redmayne Road. See figure 1 below.

The site is near the M7 Motorway. Access to the motorway is facilitated by The Horsley Drive, M7 Interchange.

The subject site is approximately 66ha in area and 1km to the west of the Wetherill Park industrial precinct.



2.0 EXISTING SERVICES

2.1 SYDNEY WATER

The site falls within the Cecil Park potable water system area. Significant trunk water main exists in The Horsley Drive (3x375mm and 1x250mm – trunk water mains), in Ferrers Road (1x450mm trunk main and a 150mm reticulation main). Smaller reticulation mains exist in Redmayne Road (1x100mm main) and Chandos Road (1x100mm main). This system is currently at capacity however system amplifications to boost capacity will be complete and operational by 2022 – refer to Sydney Water correspondence in Appendix A

No waste water reticulation systems exist in the area.

2.2 TELECOMMUNICATIONS

Substantial fibre-optic systems exist in The Horsley Drive with further minor fibre-optic cabling in Redmayne Road and Ferrers Road. Copper pair systems exist in Chandos Road.

2.3 GAS

High Pressure trunk gas main exists in easements through the eastern part of the subject site. Development around this main would require consultation with Jemena. A 3500kPa primary main and a 1050kPa secondary main is constructed within Chandos Road. Connection to the secondary main by installation of a regulator valve set would provide gas service to the proposed site. Jemena have a metering facility constructed adjacent to the subject rezoning site at 204-214 Chandos Road. Jemena have received approval for a power to gas facility and hydrogen bus refuelling facility to be constructed on this site.

2.4 ELECTRICTY

Major High Voltage (H.V) Transmission system under the control of Transgrid crosses the site in an east-west direction to the north of The Horsley Drive and south of Redmayne Road. Endeavour Energy has overhead H.V (11KV) and low voltage reticulation network in Chandus Street and Redmayne Rd together with H.V underground reticulation system in The Horsley Drive. The site is serviced from the Horsley Park Zone Substation.

3.0 REQUIRED INFRASTRUCTURE

3.1 POTABLE WATER

The presence of substantial trunk water mains adjacent to or close to the subject site provides an opportunity to provide reticulation systems to serve potential development of the site.

Trunk water mains are a means of transferring water to other Sydney Water assets such as reservoirs and water pumping stations to facilitate service to other areas. A study of each of the trunk water mains would need to be undertaken to determine the current and future supply requirements for the areas that these trunk mains service.

Whilst the presence of trunk water mains may indicate the potential for servicing an area, it may not necessarily mean that there is spare capacity to service development adjacent to a trunk main.

Sydney Water have responded to a feasibility application lodged for this proposed development noting that based on the Cecil Park amplifications which will be completed and operational by 2022 that capacity exists with the water mains in The Horsley Drive to service the proposed development.

3.2 WASTE WATER

As stated previously, no waste water systems exist in or near the subject area.

A 225mm sewer exists to serve the recently developed industrial estate off Burilda Close. This sewer main could be extended to service PART of the site. Topographic constraints restrict the ability of this main to service the whole of the site. This 225mm main drains to a 375mm main in Cowpasture Road adjacent to the corner of Victoria Road which, in my opinion, would have capacity to service the development based on the estimated site discharge of approx. 110kl/day.

Sydney Water in their feasibility response have recommended a modelling study of the existing receiving waste water system be undertaken to provide an assessment of any issues within the existing network that may require amplification to cater for flows from this site.

Due to the topography of the proposed development site a Sewer Pump Station (SPS) may be required to service parts of the development site and discharge via a rising main to the 225/375mm system at Cowpasture Road.

A feasibility application response from Sydney Water is attached in Appendix A.

3.3 TELECOMMUNICATIONS

Substantial fibre-optic service is available in The Horsley Drive. Fibre-optic cabling exists in Redmayne Road. Connection from Redmayne Road with the installation of further fibre-optic cable run would provide service to the proposed site. A majority of the fibre-optic cables in The Horsley Drive are trunk carriers although some cables would allow connection to a development of the site.

3.4 GAS

Insertion of a regulator valve set in the 1050 kPa secondary main would supply the subject site. Jemena require a known end user with defined demand requirements before they supply gas reticulation to a development. Depending on the quantity of gas to be delivered to the proposed site, cost sharing arrangements would need to be discussed with Jemena.

3.5 ELECTRICITY

(a) Endeavour Energy

A Technical Review Request has been submitted to Endeavour Energy and their response is outlined in Appendix B.

The Endeavour Energy demand calculation was based on a gross floor area estimated outlined in an assessment of warehouse and office areas for a net development area of 56ha. An indicative masterplan prepared by Frasers Property, reference MP-HP-FS-710 rev A outlines the following gross floor areas:

Warehouse: 297,290m^2
Office: 16,050m^2

These figures are slightly less than the figures shown in the Endeavour Energy Technical Review response. These figures would provide a demand estimate of:

Type	Floor Area (m^2)	ADMD (VA/m^2)	Demand (MVA)
Warehouse	297,290	17	5.05
Office	16,050	100	1.61
		Total	**6.66 MVA**

Endeavour Energy notes that their network analysis indicated that a number of existing high voltage (H.V) feeders sourced from the Horsley Park Zone Substation could have spare capacity to support 7.19 MVA of demand. Endeavour

Energy in their Technical Review Request response outline the various cross feeder connections required from the H.V feeders to provide a robust and sustainable supply to the proposed development.

(b) Transgrid

As noted in section 2.4 above a major H.V transmission system under the control of Transgrid crosses the site.

Transgrid have stringent controls concerning development within or adjacent to the easement corridor that the transmission assets stand within.

Planning of the subdivision pattern that might be undertaken to facilitate development of the subject site will need to be aware of Transgrid restrictions and requirements. Reference is made to Appendix "E" outlining Transgrid Easement Guidelines.

4.0 DEMAND ESTIMATES

Demand estimates provide guidance on the potable water use and waste water discharge that would eventuate from future development of the site.

No comment is made on demand estimates for telecommunications or gas facilities.

4.1 POTABLE WATER

An indicative concept masterplan prepared by Frasers Property, reference MP-HP-FS-710 indicates possible gross floor areas. Based on those floor areas an estimate of dame is as follows:

Warehouse: 297,290m^2
Office: 16,050m^2

Discussions with many developers in the warehousing/logistics segment of the market indicate that with continued automation of the facilities being constructed for these warehouses/logistics buildings to meet client demands provides an estimate of Equivalent Population (EP) based on the following:

a) Warehouse: 1/EP/500m2 of floor space
b) Office: 1/EP/20m^2 of floor space

A conservative usage figure of 80litres/day/EP is adopted to cover "transient workers" such as truck drivers, delivery and sales personnel. A Potable Water demand assessment based on this scenario is:

Type	Gross Floor Area	EP/m^2	EP	Demand/EP	Demand
Warehouse	297,290	1/500m^2	595	80litres	47.6kl
Office	16,050	1/20m^2	805	80litres	64.4kl
				Total	**112kl/day**

Based on a warehouse/logistics development within the subject site and using an Average Day Demand (A.D.D) of 9.2kl/day/PNha that was outlined in the GHD Basis of Planning Report (July 2016) for the Oakdale Local Area Servicing Plan (L.A.S.P) the following potable water demand provides an assessment that covers a higher us and a longer planning horizon.

NET DEVELOPABLE AREA (ha)	AVERAGE DAY DEMAND (kl/day)	MAX DAY DEMAND (kl/day)
56	515	825

For this service infrastructure report a figure of 515kl/day is utilised because the demand would cover disparate types of industrial users over the planning horizon of 50 years.

Therefore, a demand estimate of 515kl/day is considered a reasonable assumption.

4.2 WASTE WATER

The Sewage Code of Australia (Sydney Water edition) provide guidance in calculating waste water demand estimates. Utilising the figures in that publication would provide a demand estimate of:

AREA (Net developable area)	Estimated EP/ net developable area	Usage L/EP	DEMAND
56ha	75	180	630kl/day (7.3l/s)

However, these figures are based on "traditional" industrial uses. The density of development, based on technologies utilised in warehouse/logistics facilities, indicates that the EP value is significantly lower than outlined in the Sewerage Code of Australia. A more practical approach is to utilise a demand based on 90% of the potable water use of the site for waste water discharge calculation. This would result in a discharge of 465kl/day (5.4l/s over 24 hour period or 10.81l/s over 12 hour work period).

5.0 DELIVERY INFRASTRUCTURE

5.1 POTABLE WATER

Should modelling of the relevant trunk water mains prove that capacity exists within those systems, then the potential to connect to the trunk mains in The Horsley Drive, connection to the 450mm trunk main in Ferrers Road or amplification of the 150mm reticulation main in Ferrers Road to a 200mm-250mm main exists – this later option can be achieved via an under-pressure cut in to the 450mm trunk main without disrupting supply along that 450mm main.

Reticulation mains can then be provided for development within the subject site.

5.2 WASTE WATER

Extension of adjacent reticulation systems may be possible (subject to topographic constraints) to serve part of the subject site. Alternatively, a Sewer Pump Station and associated rising main may be required to service other areas of the site.

A large SPS facility, with significant capacity for storage, emergency overflow storage, dual pumps, chemical dosing to ensure water quality at the receiving manhole (if capacity exists) and a 1.5km rising main (possibly through privately or publicly-owned land) would need to be provided. Given the topography and conflicts with existing assets along the rising main route, an allowance of greater than $2 million should be made.

Modelling of the receiving system would need to be carried out to see if pump flows of 5.4l/s can be accommodated at the receiving manhole and downstream system however given the size of the receiving waste water system that level of pump flow should be capable of being accommodated in the system. If not then further costs may be incurred if upgrades/amplifications of existing assets are required however the likelihood of this occurring is low.

6.0 CONCLUSION

Development of the subject site will require studies to be undertaken of adjacent water assets and capacity of the Wetherill Park waste water system. These studies take considerable time to organise with Sydney Water. Sydney Water is the owner and custodian of the potable water and waste water models of their system areas. They require internal Sydney Water stakeholder engagement to outline an initial scoping strategy before consent is given to allow consultants to undertake a modelling program to Sydney Water requirements.

As a number of the adjacent trunk water supply mains supply large system areas which are undergoing substantial growth, the ability to connect to some of these trunk water mains remains problematic.

Other services (telecommunications and gas) can be made available to the site.

Gregory K Oxley
Registered Land Surveyor/Project Director

APPENDIX A
SYDNEY WATER

Case Number: 190538

May 31, 2021

FRASERS PROPERTY AUSTRALIA
c/- LANDPARTNERS PTY LTD

FEASIBILITY LETTER

Developer:	**FRASERS PROPERTY AUSTRALIA**
Your reference:	**SY073931.S73**
Development:	**Lot Chandos, The Horsley Dr, Redmayne, Horsley Park**
Development Description:	**Rezone certain lands at Horsley Park currently zoned RU2 (Rural Landscape) to employment based lands**
Your application date:	**March 19, 2021**

Dear Applicant

This Feasibility Letter (Letter) is a guide only. It provides general information about what Sydney Water's requirements could be if you applied to us for a Section 73 Certificate (Certificate) for your proposed development. **The information is accurate at today's date only.**

If you obtain development consent for that development from your consent authority (this is usually your local Council) they will require you to apply to us for a Section 73 Certificate. You will need to submit a new application (and pay another application fee) to us for that Certificate by using your current or another Water Servicing Coordinator (Coordinator).

Sydney Water will then send you either a:

- Notice of Requirements (Notice) and Developer Works Deed (Deed) or
- Certificate.

These documents will be the definitive statement of Sydney Water's requirements.

There may be changes in Sydney Water's requirements between the issue dates of this Letter and the Notice or Certificate. The changes may be:

- if you change your proposed development eg the development description or the plan/site layout, after today, the requirements in this Letter could change when you submit your new application; and

- if you decide to do your development in stages then you must submit a new application (and pay another application fee) for each stage.

What You Must Do To Get A Section 73 Certificate In The Future.

To get a Section 73 Certificate you must do the following things. You can also find out about this process by visiting www.sydneywater.com.au > Plumbing, building & developing > Developing > Land development.

1. **Obtain Development Consent from the consent authority for your development proposal.**

2. **Engage a Water Servicing Coordinator (Coordinator).**

   You must engage your current or another authorised Coordinator to manage the design and construction of works that you must provide, at your cost, to service your development. If you wish to engage another Coordinator (at any point in this process) you must write and tell Sydney Water.

   For a list of authorised Coordinators, either visit www.sydneywater.com.au > Plumbing, building & developing > Developing > Providers > Lists or call **13 20 92.**

   The Coordinator will be your point of contact with Sydney Water. They can answer most questions that you might have about the process and developer charges and can give you a quote or information about costs for services/works (including Sydney Water costs).

3. **Water and Sewer Works**

   3.1 Water

   Your development must have a frontage to a water main that is the right size and can be used for connection.

   Based on your application, you have provided us the following required demands:

   ADD – 515 KL/d (based on application)
   MDD = 1022 KL/d (used model MDD/ADD factor)

   Sydney Water has assessed your application and found that:

   - The proposed development is within Cecil Park water supply zone (remainder)

- However, Cecil Park Reservoirs are currently at capacity and cannot accommodate demands from new developments without the additional transfer flow rate from Liverpool Water Supply Zone (WSZ) and trunk infrastructure proposed within Cecil Park WSZs.

- Sydney Water is currently delivering the following trunk drinking water infrastructure to increase supply to the area – this work is in delivery and proposed to be operational in 2022.
    - Rising Main (DN900) and pump WP0432 and 60ML reservoir at Liverpool.
    - DN1200/DN1050 from Cecil Park reservoir up to Western Rd, with offtakes at Range Rd and Western Rd connecting existing mains in Elizabeth Drive.

- Subject to the drinking water trunk amplifications, there is capacity in the DN250 along Horsley Dr to service the proposed development based on the information provided.
- Further detailed requirements may be available at Section 73 stage.

3.2 Sewer

Your development must have a sewer main that is the right size and can be used for connection. That sewer must also have a connection point within your development's boundaries.

Based on your application, you have provided us the following required demands:

Estimate Average Dry Weather Flow (A.D.W.F) at 90% of A.D.D
Estimate W.W Demand 108kl/day

Sydney Water has assessed your application and found that:

- The proposed development is within Wetherill Park SCAMP and Fairfield/Malabar system however is not currently serviced by a sewer network.

- There is a DN375 approximately 1.5 km to the east side of the proposed development at Cowpasture Rd. (see image below).

The proposed development may be serviced through the extension of DN375 sewer main subject to land rezoning, sewer network capacity assessment and options planning.

You must engage a hydraulic consultant to complete this modelling. It is preferred that the hydraulic consultant is familiar with Sydney Water models to conduct a robust assessment of the current and proposed flows of your site.

Sydney Water can assist you to develop a detailed scope of works once you are ready to engage the consultant.

If required, Sydney Water can provide this modelling service under a separate Flexible Planning Agreement with you.

Further detailed requirements may be available at Section 73 stage.

Figure 1: DN375 sewer in Cowpasture Road, approximately 1.5km east of proposed development (shown in red)

4. Ancillary Matters

4.1 Asset adjustments

After Sydney Water issues this Notice (and more detailed designs are available), Sydney Water may require that the water main/sewer main/stormwater located in the footway/your property needs to be adjusted/deviated. If this happens, you will need to do this work as well as the extension we have detailed above at your cost. The work must meet the conditions of this Notice and you will need to complete it **before we can issue the Certificate**. Sydney Water will need to see the completed designs for the work and we will require you to lodge a security. The security will be refunded once the work is completed.

4.2 Entry onto neighbouring property

If you need to enter a neighbouring property, you must have the written permission of the relevant property owners and tenants. You must use Sydney Water's **Permission to Enter** form(s) for this. You can get copies of these forms from your Coordinator or the Sydney Water website. Your Coordinator can also negotiate on your behalf. Please make sure that you address all the items on the form(s) including payment of compensation and whether there are other ways of designing and constructing that could avoid or reduce their impacts. You will be responsible for all costs of mediation involved in resolving any disputes. Please allow enough time for entry issues to be resolved.

OTHER THINGS YOU MAY NEED TO DO

Shown below are other things that may well be a requirement of Sydney Water in the future because of the impact of your development on our assets. You must read them before you go any further.

Approval of your building plans

Please note that your building plans must be approved. This can be done on our Tap in™ system Sydney Water Tap in ™ or call 13 20 92.

This is not a requirement of the Certificate, but the approval is needed because construction/building works may impact on our existing assets (e.g. water and sewer mains). In any case, these works MUST NOT commence until we have granted approval.

Your WSC can tell you about the approval process including:

- Possible requirements

- Their costs
- Timeframes.

We recommend that you apply for Building Plan Approval early as in some instances your WSC may need to refer your building plans to us for detailed review. You'll be required to pay us for the costs associated with the detailed review.

Note: You must obtain our written approval before you do any work on our systems. We'll take action to have work stopped on the site if you do not have that approval. We will apply Section 44 of the *Sydney Water Act 1994.*

Disused Sewerage Service Sealing

Please do not forget that you must pay to disconnect all disused private sewerage services and seal them at the point of connection to a Sydney Water sewer main. This work must meet Sydney Water's standards in the Plumbing Code of Australia (the Code) and be done by a licensed drainer. The licensed drainer must arrange for an inspection of the work by a NSW Fair Trading Plumbing Inspection Assurance Services (PIAS) officer. After that officer has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

Soffit Requirements

Please be aware that floor levels must be able to meet Sydney Water's soffit requirements for property connection and drainage.

Requirements for Business Customers for Commercial and Industrial Property Developments

If this property is to be developed for Industrial or Commercial operations, it may need to meet the following requirements:

Trade Wastewater Requirements

If this development is going to generate trade wastewater, the property owner must submit an application requesting permission to discharge trade wastewater to Sydney Water's sewerage system. You must wait for approval of this permit before any business activities can commence.

The permit application should be emailed to Sydney Water's Business Customer Services at businesscustomers@sydneywater.com.au

It is illegal to discharge Trade Wastewater into the Sydney Water sewerage system without permission.

A **Boundary Trap** is required for all developments that discharge trade wastewater where arrestors and special units are installed for trade wastewater pre-treatment.

If the property development is for Industrial operations, the wastewater may discharge into a sewerage area that is subject to wastewater reuse. Find out from Business Customer Services if this is applicable to your development.

Backflow Prevention Requirements

Backflow is when there is unintentional flow of water in the wrong direction from a potentially polluted source into the drinking water supply.

All properties connected to Sydney Water's supply must install a testable **Backflow Prevention Containment Device** appropriate to the property's hazard rating. Property with a high or medium hazard rating must have the backflow prevention containment device tested annually. Properties identified as having a low hazard rating must install a non-testable device, as a minimum.

Separate hydrant and sprinkler fire services on non-residential properties, require the installation of a testable double check detector assembly. The device is to be located at the boundary of the property.

Before you install a backflow prevention device:

1. Get your hydraulic consultant or plumber to check the available water pressure versus the property's required pressure and flow requirements.
2. Conduct a site assessment to confirm the hazard rating of the property and its services. Contact PIAS at NSW Fair Trading on **1300 889 099**.

For installation you will need to engage a licensed plumber with backflow accreditation who can be found on the Sydney Water website:
http://www.sydneywater.com.au/Plumbing/BackflowPrevention/

Water Efficiency Recommendations

Water is our most precious resource and every customer can play a role in its conservation. By working together with Sydney Water, business customers are able to reduce their water consumption. This will help your business save money, improve productivity and protect the environment.

Some water efficiency measures that can be easily implemented in your business are:

- Install water efficiency fixtures to help increase your water efficiency, refer to WELS (Water Efficiency Labelling and Standards (WELS) Scheme, http://www.waterrating.gov.au/
- Consider installing rainwater tanks to capture rainwater runoff, and reusing it, where cost effective. Refer to http://www.sydneywater.com.au/Water4Life/InYourBusiness/RWTCalculator.cfm
- Install water-monitoring devices on your meter to identify water usage patterns and leaks.
- Develop a water efficiency plan for your business.

It is cheaper to install water efficiency appliances while you are developing than retrofitting them later.

Contingency Plan Recommendations

Under Sydney Water's **customer contract** Sydney Water aims to provide Business Customers with a continuous supply of clean water at a minimum pressure of 15meters head at the main tap. This is equivalent to 146.8kpa or 21.29psi to meet reasonable business usage needs.

Sometimes Sydney Water may need to interrupt, postpone or limit the supply of water services to your property for maintenance or other reasons. These interruptions can be planned or unplanned.

Water supply is critical to some businesses and Sydney Water will treat vulnerable customers, such as hospitals, as a high priority.

Have you thought about a **contingency plan** for your business? Your Business Customer Representative will help you to develop a plan that is tailored to your business and minimises productivity losses in the event of a water service disruption.

For further information please visit the Sydney Water website at: http://www.sydneywater.com.au/OurSystemsandOperations/TradeWaste/ or contact Business Customer Services on **1300 985 227** or businesscustomers@sydneywater.com.au

Fire Fighting

Definition of fire fighting systems is the responsibility of the developer and is not part of the Section 73 process. It is recommended that a consultant should advise the developer regarding the fire fighting flow of the development and the ability of Sydney Water's system to provide that flow in an

emergency. Sydney Water's Operating Licence directs that Sydney Water's mains are only required to provide domestic supply at a minimum pressure of 15 m head.

A report supplying modelled pressures called the Statement of Available pressure can be purchased through Sydney Water Tap in™ and may be of some assistance when defining the fire fighting system. The Statement of Available pressure, may advise flow limits that relate to system capacity or diameter of the main and pressure limits according to pressure management initiatives. If mains are required for fire fighting purposes, the mains shall be arranged through the water main extension process and not the Section 73 process.

Large Water Service Connection

A water main are available to provide your development with a domestic supply. The size of your development means that you will need a connection larger than the standard domestic 20 mm size.

To get approval for your connection, you will need to lodge an application with Sydney Water Tap in™. You, or your hydraulic consultant, may need to supply the following:

- A plan of the hydraulic layout;
- A list of all the fixtures/fittings within the property;
- A copy of the fireflow pressure inquiry issued by Sydney Water;
- A pump application form (if a pump is required);
- All pump details (if a pump is required).

You will have to pay an application fee.

Sydney Water does not consider whether a water main is adequate for fire fighting purposes for your development. We cannot guarantee that this water supply will meet your Council's fire fighting requirements. The Council and your hydraulic consultant can help.

Disused Water Service Sealing

You must pay to disconnect all disused private water services and seal them at the point of connection to a Sydney Water water main. This work must meet Sydney Water's standards in the Plumbing Code of Australia (the Code) and be done by a licensed plumber. The licensed plumber must arrange for an inspection of the work by a NSW Fair Trading Plumbing Inspection Assurance Services (PIAS) officer. After that officer has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

Other fees and requirements

The requirements in this Notice relate to your Certificate application only. Sydney Water may be involved with other aspects of your development and there may be other fees or requirements. These include:

- plumbing and drainage inspection costs
- the installation of backflow prevention devices
- trade waste requirements
- large water connections

- council firefighting requirements. (It will help you to know what the firefighting requirements are for your development as soon as possible. Your hydraulic consultant can help you here.)

No warranties or assurances can be given about the suitability of this document or any of its provisions for any specific transaction. It does not constitute an approval from Sydney Water and to the extent that it is able, Sydney Water limits its liability to the reissue of this Letter or the return of your application fee. You should rely on your own independent professional advice.

END

APPENDIX B
ENDEAVOUR ENERGY

8 April 2021

Endeavour Energy Ref: ENL4002

Land Partners Pty Ltd
PO Box 1144
DUNDAS
NSW 2117

Attention: Greg Oxley

ENL4002 - TECHNICAL REVIEW | KEYHOLE ESTATE DEVELOPMENT | REDMAYNE ROAD HORSLEY PARK

Dear Greg,

Thank you for your enquiry regarding the proposed Keyhole Estate Development at the above address. This enquiry has been registered under our reference numbers – ENL4002. Please quote this number for all future correspondence.

Endeavour Energy acknowledges that the developer is preparing to lodge a planning proposal to rezone certain lands at Horsley Park (as shown below) currently zoned RU2 (Rural Landscape) to employment based lands.

51 Huntingwood Drive, Huntingwood, NSW 2148
PO Box 811, Seven Hills, NSW 1730
T: 133 718

endeavourenergy.com.au

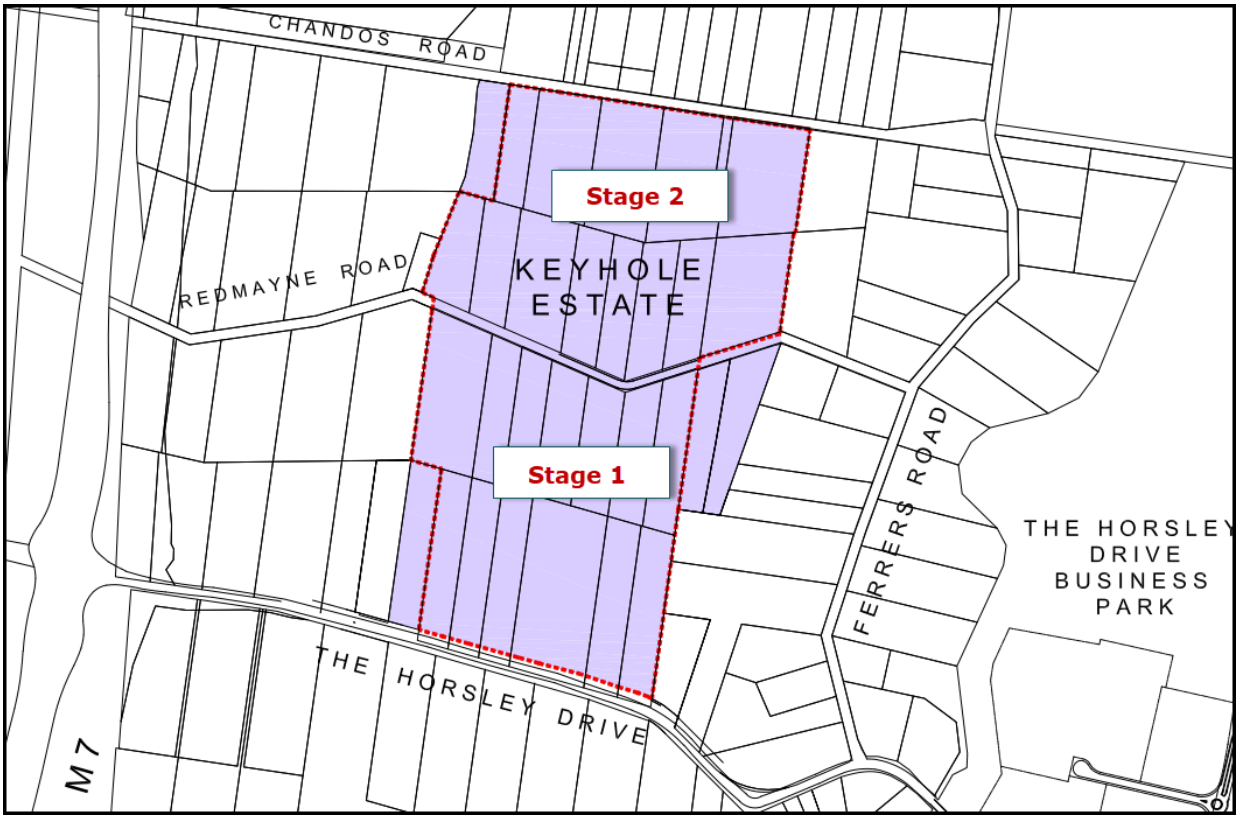
ABN 11 247 365 823

Scope of Keyhole Estate Development

It is advised that the total net development areas will be 56ha and the site will be yielded 34ha gross floor areas; and the total required load demand is estimated to be 7.2MVA as per the following table.

Type	Floor Area (m^2)	ADMD (VA/m^2)	Demand (MVA)
Warehouse	323,000	17	5.49
Office	17,000	100	1.70
Total			**7.19**

Development concept masterplan and supply connection required date has not yet determined at this preliminary stage. However it is anticipated that Keyhole Estate Development will consist of 2 major stages, Stage 1 and Stage 2, as showed below.

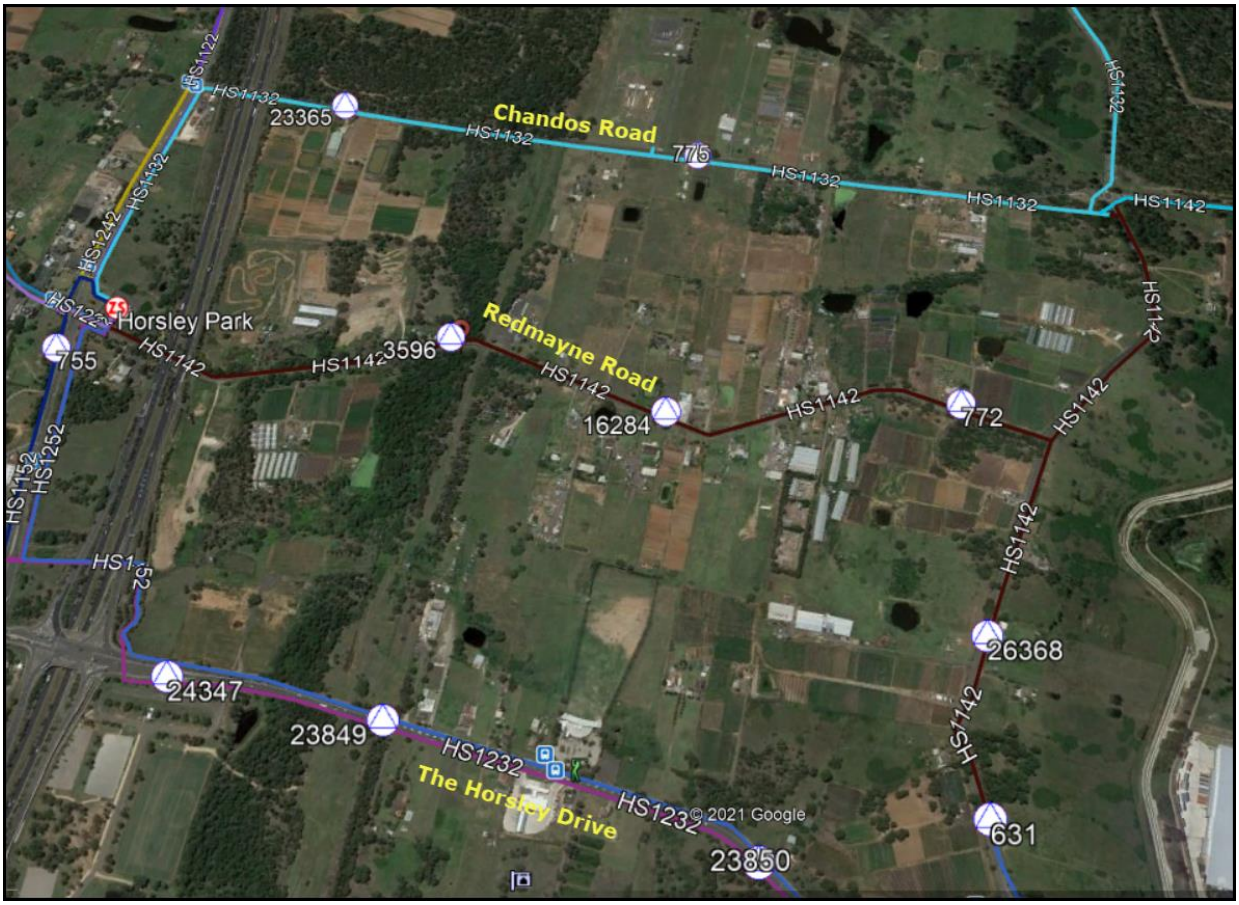


Supply Arrangements and Conditions

Recently network analysis indicates that at present existing feeders, HS1132 Chandos Road and HS1252 Ferrers Road, sourced from Horsley Park Zone Substation could have spare capacity to support the proposed development.

1. Feeder HS1252 Ferrers Road in The Horsley Drive is available for half the proposed total 7.2MVA load of 3.6MVA / 189A.
2. Feeder HS1232 Wallgrove Road in The Horsley Drive is available for half the proposed total 7.2MVA load of 3.6MVA / 189A.
3. One cross-feeder tie will be required between HS1252 Ferrers Road and HS1232 Wallgrove Road within Stage 1 of the Keyhole Estate.
4. One cross-feeder tie will be required between HS1252 Ferrers Road and HS1232 Wallgrove Road within Stage 2 of the Keyhole Estate.

5. One cross-feeder tie will be required from feeder HS1142 Redmayne Road to each of the other two feeders in Redmayne Road (two ties in total) to provide partial back-up.
6. One cross-feeder tie will be required from feeder HS1132 Chandos Road to each of the other two feeders in Chandos Road (two ties in total) to provide partial back-up.
7. Existing Pole Substations, namely PS 7715 in Chandos Road and PS 16284 in Redmayne Road will be removed otherwise relocated.



In order to program this connection, I recommend you to submit subdivision applications and engage the services of a Level 3 ASP to prepare and provide an electrical design to Endeavour Energy in the form of a Proposed Metho of Supply. This activity is customer funded contestable work and you will need to pay for it.

Hope this assists for the meantime and this advice provided is in response to an enquiry only and does not constitute a formal method of supply. An application must be submitted and subsequent designs have been certified or approvals granted will Endeavour Energy reserve capacity on the network.

Should you have any questions regarding this response to your request for technical review, please contact me.

Yours faithfully,

David HO

David Ho
Contestable Works Project Manager | **Network Connections**
☎ Direct: (02) 9853 7901 | ✉ Email: david.ho@endeavourenergy.com.au

APPENDIX C
TRANSGRID TRANSMISSION EASEMENT GUIDELINES

Easement guidelines

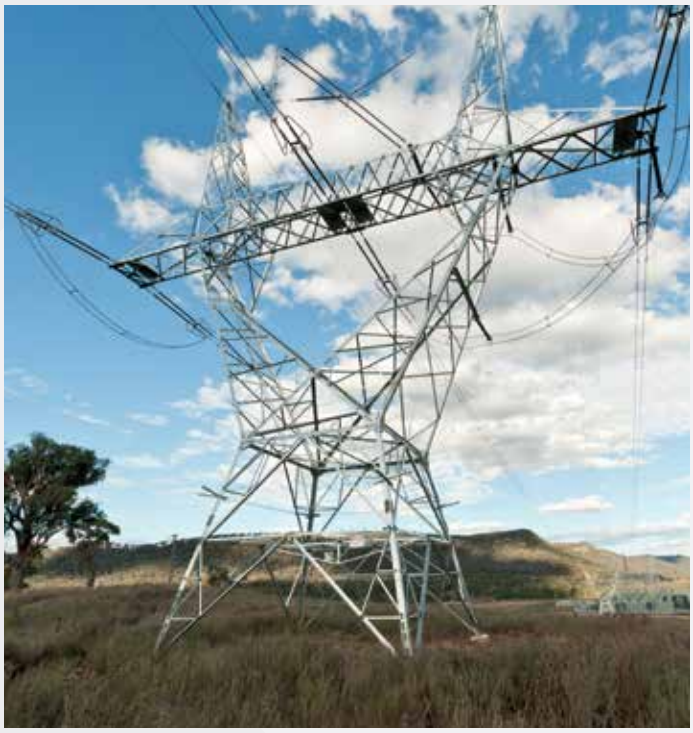
Living and working with electricity transmission lines

We all rely on electricity to power our homes and businesses, however coming into contact with high voltage electricity can cause serious injury or death.

To protect your safety and provide a safe, reliable network, TransGrid has easements over its transmission lines, which restrict the activities that can be carried out. Easements are also “rights of way”, which allow our staff and contractors access to construct, operate and maintain TransGrid’s infrastructure.

TransGrid’s primary concern is the **safety of people and the environment**, and we are committed (and required by legislation) to providing a safe and reliable transmission network.

For more information on potential electrical safety risks, please see our **Electrical safety risks fact sheet**. You can learn more about electricity infrastructure by reading our **High voltage transmission line fact sheet**.



What activities may be carried out within or adjacent to transmission line easements?

High voltage transmission lines have different safety risks from urban powerlines, and this is why TransGrid encourages the principle of "prudent avoidance"[1]. When planning houses, schools, sensitive land uses and other types of new development, proximity to existing or planned high voltage transmission lines should always be considered.

Where developments cannot avoid transmission line easements, open space uses – that do not encourage people to congregate under the transmission lines or close to electricity infrastructure – should be given preference over other land uses, such as residential or commercial.

These guidelines will assist you to work out:

> whether your proposed activity or development within (or adjacent to) an electricity easement is **permitted**; **requires TransGrid's permission**; or is **prohibited**; and

> the process for seeking TransGrid's permission prior to carrying out the activity or lodging your development application with a consent authority.

TransGrid can only give its permission to your proposal as holder of the easement. TransGrid's permission is not a development consent.

Councils are required to refer development applications that affect TransGrid's transmission line easements to TransGrid. Seeking TransGrid's permission prior to lodging your development application will help expedite this process.

If you undertake an activity or development that is not in accordance with the Easement guidelines, you may be required to remove it or relocate it at your expense.

Please note that if you have received TransGrid's written permission under previous guidelines, this permission remains valid.

Is your proposal located within or adjacent to a TransGrid easement?

Transmission line easements vary in width depending on the operating voltage and design of the infrastructure. Generally, the higher the voltage, the wider the easement. Figure 1 below shows the typical widths of transmission line easements.

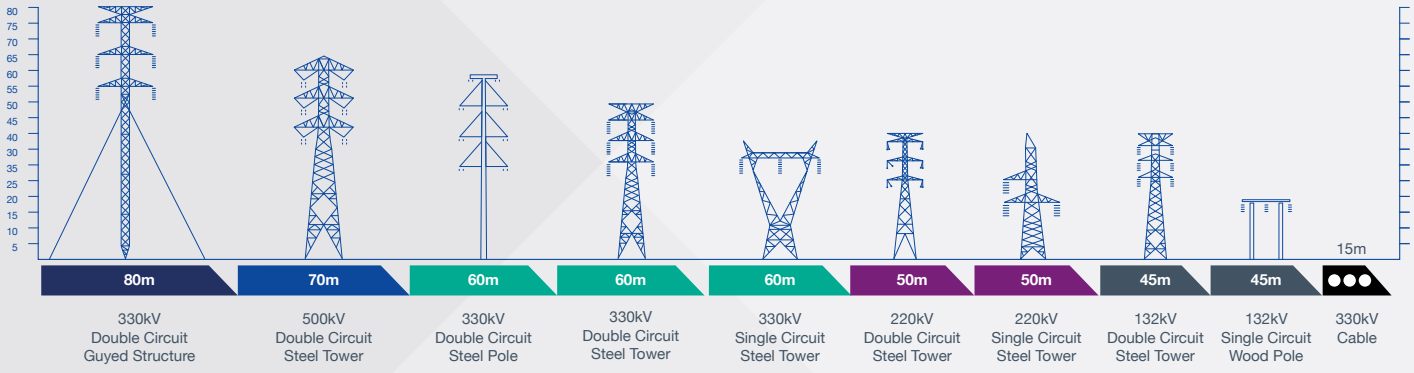


Figure not to scale. Typical widths only, may vary on a case by case basis.

Figure 1: Typical Easement Widths

[1] As identified by The Right Honourable Harry Gibbs Report, Inquiry into Community Needs and High Voltage Transmission Line Development, 1991.

The distances in the Easement guidelines are based on the typical easement widths shown in Figure 1. However, because there are some variations to easement widths, you will need to know the width of the easement near your proposal.

To work out whether there is a TransGrid easement on your property and how wide it is, you can contact the New South Wales Land Registry Services for a detailed survey plan.

NSW Land Registry Services can be contacted on 1300 052 637 or via their website at **www.nswlrs.com.au**.

Is your proposal outside the exclusion zone?

TransGrid has developed an **exclusion zone** to enable suitable activities within easements, while providing a safe clearance area around TransGrid transmission lines and structures to protect public safety and the network.

Please check the criteria and diagrams below to ensure that your proposal is outside the exclusion zone.

If your proposal is located within the **exclusion zone**, you will need to relocate it or seek permission from TransGrid. Most activities are prohibited within the **exclusion zone**, to meet TransGrid's public safety obligations.

Exclusion zone criteria activities/developments/structures must:

1. not impede TransGrid's access to its transmission infrastructure;
2. where transmission lines are **132kV and below:**
   - be located at least 20 metres away from any part of a transmission structure or guy wire;
   - for metallic structures, be located at least 22 metres away from any part of a transmission structure or guy wire;
   - be located at least 10 metres from the centre of the transmission line;
3. where transmission lines are **220kV and above:**
   - be located at least 30 metres away from any part of a transmission line structure or guy wire;
   - be located at least 17 metres from the centre of the transmission line.

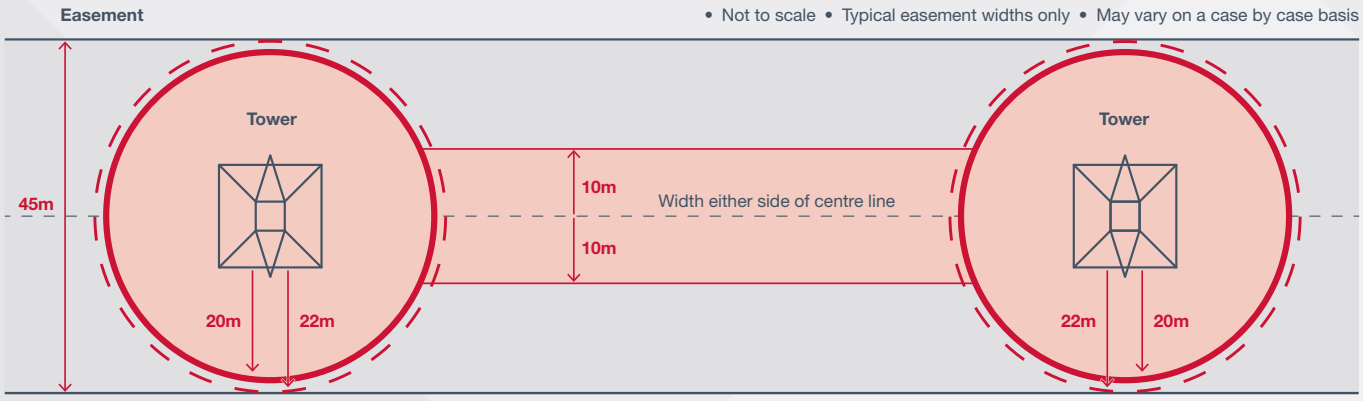


Figure 2: 132kV and below Exclusion Zone

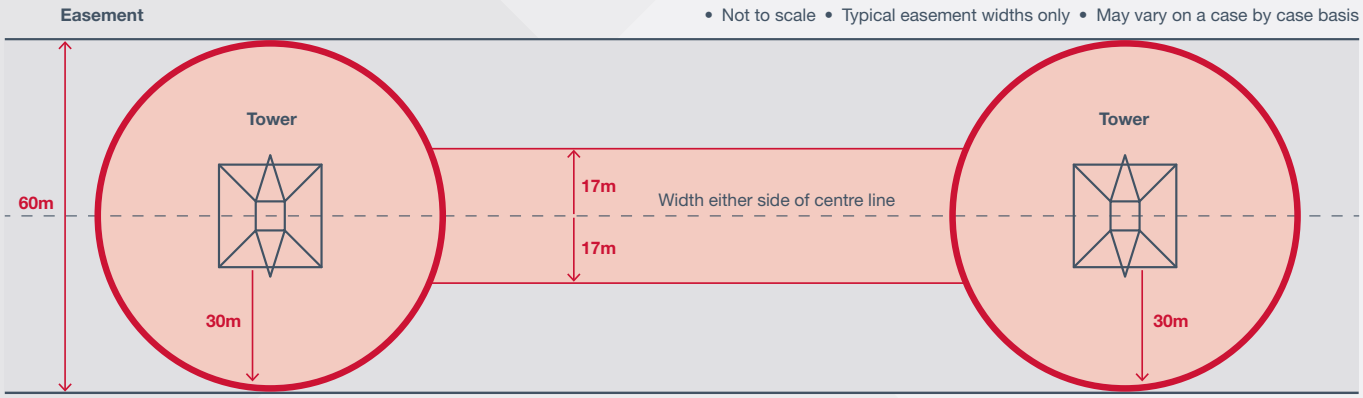


Figure 3: 220kV and above Exclusion Zone

If you are uncertain whether your proposal is within the exclusion zone, please contact TransGrid by submitting an enquiry via our online Easement Enquiries Portal: https://www.transgrid.com.au/being-responsible/public-safety/Living-and-working-with-electricity-transmission-lines

Is your proposal permitted within TransGrid easements?

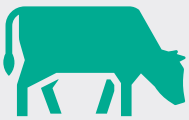
If your proposal is described below and is outside the **exclusion zone,** no further permission from TransGrid is required.

Where your proposal within a transmission line easement will require development consent, the consent authority must still refer the development application to TransGrid. For this reason, we recommend you seek TransGrid's confirmation that your proposal is permitted within the easement **before** you lodge your development application with Council, by submitting an enquiry via TransGrid's online Easement Enquiries Portal.

Please note: TransGrid reserves the right to review each activity individually and apply controls on a case-by-case basis. TransGrid will take into account public safety risks, and the safe operation, access and maintenance of TransGrid's electricity infrastructure.

If you are unsure whether your proposal is **permitted,** please contact TransGrid by submitting an enquiry via our online Easement Enquiries Portal.

The following activities where located outside the **exclusion zone** are **permitted** within TransGrid's easements:



Cropping and grazing, provided:

1. Machinery cannot extend more than 4.3 metres above ground level

Note: Exclusion zone requirements to be at least 10/17 metres from the centre of transmission lines do not apply to cropping and grazing, however all other exclusion zone requirements apply. TransGrid's Fencing guidelines must be complied with.

All other agricultural activities including irrigation, provided:

1. Machinery cannot extend more than 4.3 metres above ground level
2. All fixed metallic objects are earthed
3. Machinery, including irrigation, must remain outside the exclusion zone
4. No solid jet of water is to be within 4 metres of overhead conductors
5. Must use non-metallic piping
6. No fuel storage
7. No transmission line outages are required to undertake agricultural activities

Note: TransGrid's Fencing guidelines must be complied with.

Planting or cultivation of trees and shrubs, provided:

1. Mature plant / tree height is less than 4 metres

Short flag poles, weather vanes, single post signs, provided:

1. Height above ground is no greater than 4.3 metres
2. Non-climbable
3. All fixed metallic parts are earthed

Vehicle parking provided:

1. Height of vehicles no greater than 4.3 metres
2. No flammable liquid containers or carriers

3. Caravans are not occupied or connected (ie, temporary parking only)
4. All fixed metallic parts are earthed

*Note: **Lighting** requires TransGrid's permission to meet height and electrical safety constraints.*

Public open spaces, such as fields, cycle ways, walkways or fenced dog parks, provided:

1. No unmanned aerial vehicles (drones), kite flying or model aircrafts, and "warning signs" are installed
2. Any structures, obstructions, seating or features (such as picnic areas) are located outside the exclusion zone and do not block access tracks to transmission line structures or guy wires
3. Parallel roads, walking tracks, footpaths, cycleways and fenced dog parks are located outside the exclusion zone

Note: Roads, tracks, footpaths, cycleways and fences which propose to cross the transmission line as a thoroughfare, require TransGrid's permission.

Storage, provided:

1. No greater than 2.5 metres height
2. Stored material is non-flammable and non-combustible
3. Non-corrosive or explosive materials
4. No garbage, refuse or fallen timber or other material which could pose a bush fire risk
5. Metallic objects earthed

Operation of mobile plant and equipment, provided:

1. It cannot be extended more than 4.3 metres in height within easement
2. Equipment or plant do not encroach into Ordinary Persons Zone - please refer to the WorkCover *NSW Work Near Overhead Power Lines Code of Practice 2006 (https://www.safework.nsw.gov.au/__data/assets/pdf_file/0020/52832/Work-near-overhead-power-lines-code-of-practice.pdf)*
3. Work is carried out by accredited persons in accordance with WorkCover NSW *Work Near Overhead Power Lines Code of Practice 2006 (https://www.safework.nsw.gov.au/__data/assets/pdf_file/0020/52832/Work-near-overhead-power-lines-code-of-practice.pdf)*

Non-electric fencing and yards, provided:

1. No greater than 2.5 metre height
2. Fencing does not restrict access to TransGrid assets
3. Metallic fencing is earthed
4. TransGrid's Fencing Guidelines are complied with

Note: Parallel metallic fencing has specific safety risks and requirements under the Fencing Guidelines.

Domestic recreational activities including structures, provided:

1. Structures must not be identified as requiring **TransGrid's permission** or **prohibited**
2. Structures must be non-metallic and no greater than 2.5 metre height
3. Floor area no greter than 20m^2, where any portion is within easement
4. Not connected to electricity supply
5. Structures (including play equipment and BBQs) must remain outside the exclusion zone
6. No unmanned aerial vehicles (drones), kite flying or model aircrafts

What if my activity does not meet the permitted criteria or is not listed above?

You will need to seek TransGrid's permission so that we can assess potential risks to your safety and the electricity transmission infrastructure.

Does your proposal require TransGrid's permission?

If your proposal does not meet the **permitted** criteria, it may fall within the following categories which **require TransGrid's permission**. Further information about the process for seeking TransGrid's permission is provided below, under "How can I seek TransGrid's Permission?"

TransGrid reserves the right to assess each request for permission on a case-by-case basis, taking into account public safety risks, and the safe operation, access and maintenance of TransGrid's electricity infrastructure.

TransGrid may grant permission with conditions, or may refuse permission where the activity could put public safety or the operation of the transmission network at risk.

If your proposal is described below and is **outside the exclusion zone,** you will **require TransGrid's permission:**

Any proposal which falls within a "permitted" catgegory but does not meet the listed criteria

Detached garages, carports, sheds, stables, pergolas and unroofed verandahs where no practicable alternative exists, provided:

1. Structures are no greater than 4.3 metres height
2. Non-habitable
3. Metallic structures are earthed
4. Floor area no greater than 20m^2, where any position is within easement
5. Power connection only permitted if electrically isolated in accordance with *AS/NZS 3000:2018 Electrical installations* outside easement

Sporting and recreational facilities, including tennis courts, basketball courts, playgrounds, exercise equipment provided:

1. Structures are no greater than 4.3 metres height
2. Metallic structures are earthed

Native plant or other nurseries, community gardens, provided:

1. Mature plant / tree height is less than 4 metres
2. Structures are no greater than 4.3 metres height
3. Any fixed structures, including pumps, are located outside the exclusion zone
4. Metallic structures must be earthed

Mobile plant with a height greater than 4.3m, provided:

1. It is operated by accredited persons in accordance with WorkCover *NSW Work Near Overhead Power Lines Code of Practice 2006 (https://www.safework.nsw.gov.au/__data/assets/pdf_file/0020/52832/Work-near-overhead-power-lines-code-of-practice.pdf)*

In-ground swimming pools including coping, provided:

1. It is located at least 30 metres from transmission line structures or supporting guy wires
2. Must be located at least 15 metres from transmission line centre (132kV or below) OR 25 metres from transmission line centre (220kV or above)

3. Power connection only permitted if electrically isolated in accordance with AS/*NZS 3000:2018 Electrical installations* outside easement
4. Site specific assessment will be required by TransGrid

Lighting/external sources of power no greater than 4.3m height:

1. Non-climbable
2. Must be electrically isolated in accordance with AS 3000 outside easement

Note: Exclusion zone requirements to be at least 10 metres from centre of 132kV and below transmission lines or 17m from centre of above 132kV lines do not apply to lighting and external sources of power, however all other exclusion zone requirements apply.

Electric fencing, where:

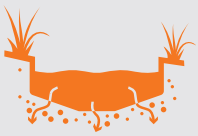
1. Height is no greater than 2.5 metres
2. Must be located at least 30 metres from transmission structures or supporting guy wires
3. TransGrid Fencing Guidelines are complied with

Roads and pathways that cross the transmission line as a thoroughfare:

1. Where it is proposed that a road passes within 30 metres of a transmission structure or supporting guy wires:
   - TransGrid may refuse consent or impose additional restrictions and other conditions
   - The structure's earthing system may require modification to prevent fault currents from entering other utility services in the road. The option of raising conductors or relocation of structures, at the full cost to the proponent, may be considered
2. TransGrid may require additional protection (such as safety barriers) where there is a risk of vehicle impact
3. Intersections shall not be located within the exclusion zone

Low voltage utilities and services such as electricity, gas, telephone and water:

1. Not located within the exclusion zone (additional clearances apply to metallic services)
2. Parallel metallic services will require specific safety assessment
3. Additional design and safety requirements will apply



Excavation, quarrying and earth works, including dam and artificial lake construction, basins, swales, drains and dispersion channels, provided:

1. No more than 3 metres in depth
2. No generation of significant amounts of dust or smoke that can compromise the transmission line high voltage insulation
3. Must not raise ground level, or reduce clearances below that required in *AS 7000:2010 Overhead line design*
4. No ponding or water retention around TransGrid's structures
5. Batter no steeper than 1 in 6 where access is required by TransGrid vehicles

Any other change in ground levels that reduce clearances below that required in AS 7000:2010 Overhead line design:

1. Criteria assessed on a case by case basis

Use of explosives:

1. Criteria assessed on a case by case basis

Mining:

1. Criteria assessed on a case by case basis

Subdivisions (see Subdivision and Development Guidelines):

1. Criteria assessed on a case by case basis
2. Subdivisions that encourage unauthorised encroachments (for example, where the majority of usable outdoor space in a proposed lot is located within a transmission line easement), will not be permitted, due to public safety risks

Is your proposal prohibited within a TransGrid easement?

If your proposal is described below, it is **prohibited** from being carried out within any part of a transmission line easement. This is due to the inherent risk to people, public safety, and to ensure the safe, reliable operation of the network.

Buildings, accommodation and structures:

1. Buildings or structures which are not listed as **permitted** or **require TransGrid's permission**
2. Construction of houses
3. Site construction offices or workshops
4. Camping or occupied caravans or other camping vehicles
5. Above ground pools

Fixed plant or equipments

Interference with transmission lines:

1. The placing of obstructions within 20 metres of any part of a transmission line structure or supporting guy wires
2. Placing any obstructions on access tracks or within the easement area that restricts access
3. Any structure whatsoever that during its construction or future maintenance will require an Accredited Person to access as per the WorkCover *NSW Work Near Overhead Power Lines Code of Practice 2006 (https://www.safework.nsw.gov.au/__data/assets/pdf_file/0020/52832/Work-near-overhead-power-lines-code-of-practice.pdf)*
4. The attachment of any fence, any signage, posters, or anything else, to a transmission line structure or guy wire
5. Any work that generates significant amounts of dust or smoke that can compromise the transmission line high voltage insulation
6. Movement of any vehicle or plant between tower legs, within 5 metres of a transmission line structure, guy wire or between a guy wire and the transmission pole
7. Kite flying or model aircraft within the easement, flying of remote controlled or unmanned aerial vehicles (such as drones), any manned aircraft or balloon within 60 metres of any transmission line structure, guy wire or conductor
8. Structures or objects that encourage or facilitate climbing (including working from vehicles)

Note: The final structure may meet AS7000 clearances, but may be accessible by Ordinary Persons within the Ordinary Persons Zone.

Storage of flammable, combustible, corrosive or explosive materials, garbage, refuse or fallen timber

Burning off or the lighting of fires

Unsafe work practices under Work Near Overhead Power Lines Code of Practice:

1. Any vegetation maintenance (such as felling tall trees) where the vegetation could come within the Ordinary Persons Zone as per the *WorkCover NSW Work Near Overhead Power Lines Code of Practice 2006*
2. Any activity (including operation of mobile plant or equipment having a height when fully extended exceeding 4.3 metres) by persons not Accredited or not in accordance with the requirements of the *WorkCover NSW Work Near Overhead Power Lines Code of Practice 2006*.

What about underground cable easements

Different risks and requirements apply near TransGrid transmission cables. For further guidance, please see the **Working near TransGrid cables guidelines**.

Underground cables are not obvious, and you may not know there is one located on your property. A **Dial Before You Dig (DBYD)** search is essential prior to any excavation works.

Given the nature of underground cables, all proposals within cable easements require TransGrid's permission.

Please note: TransGrid reserves the right to review each activity and apply controls on a case-by-case basis, taking into account public safety risks, and the safe operation, access and maintenance of TransGrid's electricity infrastructure.

How can I seek TransGrid's permission?

You can seek TransGrid's permission to carry out proposals within or adjacent to an easement via TransGrid's online Easement Enquiries Portal: https://www.transgrid.com.au/being-responsible/public-safety/Living-and-working-with-electricity-transmission-lines

This should be done **prior** to lodging your development application or planning agreement application with your consent authority. TransGrid's permission is given as holder of the easement only, and does not constitute approval to carry out the activity or development.

Please check that your proposal is consistent with these Easement Guidelines before you seek TransGrid's permission, so that we can respond as efficiently as possible.

Your request for permission should include the following information:

Name of applicant and/or company or Council	✓
Street address and Lot-DP	✓
Description of proposal with height, depth and location of proposed activities/ structures/ development and assessment of impact on transmission infrastructure	✓
Contact information including phone number, address and email address	✓
A detailed, legible and to-scale plan showing property boundaries, proposal and distance of proposal to TransGrid's easement and transmission line structures and guy wires (if applicable) For large scale subdivisions, a Site Plan showing all new access points and access ways to the easement and transmission line structures	✓
A three dimensional CAD drawing in 3D-DXF format	Only if proposal changes ground levels ✓

If we do not receive this information we may need to request further details from you, and this will delay your request for permission.

TransGrid has also prepared supplementary Technical Guidelines and Fact Sheets to provide additional information for specific activities:

> High voltage transmissions network fact sheet

> Electrical safety risks fact sheet

> Work near TransGrid cables

> Subdivision and development guidelines

> Fencing guidelines

> Working near TransGrid cables information brochure

These are available on the TransGrid website at **www.transgrid.com.au/being-responsible/public-safety/living-and-working-with-transmission lines**.

If your proposal is complex (for example, master-planned subdivision), we recommend a meeting with TransGrid before you submit your application for permission. You can arrange this via our online Easement Enquiries Portal.

Can I use TransGrid's permission as part of my development application to Council?

Your consent authority is required to consult with TransGrid before granting development consent for proposals that impact transmission line easements, or where the proposal might adversely affect electricity infrastructure.

Consent authorities must take into consideration any comments made by TransGrid within 21 days of written notification of a development application.

If you have received TransGrid's permission, this should be included as part of the development application. This will enable the referral process to be as efficient as possible.

If you have changed your proposal, you will need to lodge another request for TransGrid's permission via our online Easement Enquiries Portal, as your original permission will no longer be valid. This may delay the development application process.

Seeking TransGrid's permission and applying for development consent are two separate processes. TransGrid's permission does not allow you to carry out an activity nor does it guarantee development consent.

What if I build something without TransGrid's permission?

Please contact TransGrid to discuss on:

Phone: (02) 9620 0515

Email: Easements&Development@transgrid.com.au

Relocating or modifying infrastructure and interruption to transmission

Some proposals require modifications to existing electricity infrastructure or easements.

A contract may be needed with TransGrid where you will be required to pay TransGrid's costs, such as design and construction works.

You can make a modification enquiry with TransGrid's Infrastructure team at **infrastructure@transgrid.com.au** or find further information on our website: **https://www.transgrid.com.au/what-we-do/our-network/connections-and-modifications/network-modifications/Pages/default.aspx**

You will also be responsible for any costs incurred as a consequence of interruptions to TransGrid's transmission operations arising from the development.

Contact TransGrid

If you are uncertain or require further information regarding works around or in TransGrid easements, please contact us via our online Easement Enquiries Portal: https://www.transgrid.com.au/being-responsible/public-safety/Living-and-working-with-electricity-transmission-lines

You can also reach us by contacting:

Phone: (02) 9620 0515

Email: Easements&Development@transgrid.com.au