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/Property and Services

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NSW Department of Planning and Infrastructure

Attention: Major Projects Assessment

Dear Sirs

State Significant development (SSD 13-6078) – Oakdale Central, Horsley Park (Lot 21 in DP 1173181)

We refer to the proposed State Significant Development (SSD 13 -6078). TransGrid's property: Lot 13 in DP 115491 and Lot 6 in DP 229769 abutt either side of part of Old Wallgrove Road subject to the proposed upgrade to a sub arterial four land road included in the application. TransGrid acknowledges that this upgrade of the road is required to facilitate the Oakdale Central development proposals on adjoining land. In this regard cooperation in the proposal from TransGrid is required.

TransGrid has been involved in consultations between Goodman International, Austral, Blacktown Council, the RMS and the Department of Planning and Infrastructure and is satisfied that the road works application portions of the proposal abutting TransGrid land are consistent with those discussions.

TransGrid consents to the carrying out of the road upgrade subject to a formal agreement being established in relation to negotiations to acquisition of TransGrid land at market value and to the following improvement at the detailed design/construction documentation stage: -

- Local widening is provided in the plans at the TransGrid entrance. This will be required to provide sufficient turning circle into the drive to allow for a large truck delivering a transformer without a median strip or lights impeding access;
- Heavy duty concrete design intersection due to single heavy loads such as transformers so as repairs are not necessary after the delivery of the same;
- Bus stop nearby;
- The developer must facilitate TransGrid's vehicular access to its transmission towers. . A layback will be required in an appropriate location to be specified by TransGrid. The layback is to include a 4.5 metre wide gate for facilitating access to the transmission towers to the left of the South bound lane;
- The intersection at the main entry and the proposed road to be lit in accordance to Australian standards;
- The construction of a suitable front fence, replacement of the entranceway and gardens to a suitable standard to be agreed to by TransGrid.
- Relocation of affected underground services;
- Traffic collision guards may also be required, with earthing and isolation measures implemented along the frontage of the site capable of withstanding the impact of a large truck in order to protect existing power line stanchions;
- Drainage must be designed to prevent the base of transmission towers becoming susceptible to flooding and/or soil erosion. The existing substation drainage system is being strained to over capacity by additional drainage from the Goodman development across the road. This needs to be redirected away from the substation. Any road upgrade to the subject development will need to

adequately address the drainage issues and must not discharge into the existing substation drainage system on TransGrid land;
- and
- That appropriate screen planting is provided across the frontage of the site to reduce visibility of the infrastructure from the roadway.

The road works application plans are acceptable to TransGrid subject to the technical issues in terms of proximity to existing TransGrid high voltage towers, the existing location of and future placement of any earth wires emanating from existing high voltage towers adjacent to Old Wallgrove Road and the conditions outlined below.

TransGrid's transmission line within the proximity of the Old Wallgrove Road upgrade is the:

Sydney West to Holroyd 330KV TL

- A perpendicular undercrossing of the transmission line and easement is proposed. The TL and associated easement are subject to both vertical and horizontal clearances. The clearances provided in the design statement report at Appendix 7 of the application refer to a 132kv transmission line but do not relate to the undercrossing of a 330KV transmission line. A copy of TransGrid's standard minimum construction clearances is attached for information. TransGrid requests that detailed plans and specifications be provided for assessment by TransGrid's engineers. The detailed plans and specifications to be provided need to state the design Reduced Levels (RL) using Australian Height Datum. Upon receipt of the abovementioned plans and specifications, TransGrid can appraise whether a proposed undercrossing fulfils the vertical clearance requirements based on the maximum operating temperature of the catenaries;

- Transmission towers possess underground earthing straps that protrude from each leg of a tower. For this reason, it is important to ensure that any development within reasonable vicinity of a transmission tower remains outside of the horizontal clearances around the base of the tower, which may be greater than the width of the easement. These horizontal clearances also serve to ensure that there is a safe working platform around the base of a transmission structure;

- Horizontal distances from stanchions or other transmission structures also need to be specified on the plans (with units of measure stated), to ensure the proposed placement and design of the road does not pose a risk to the transmission line. Vertical and horizontal clearances also apply to any preliminary civil works where mounds of earth, however temporary they may be, can still hazardously alter ground levels within the clearance requirement. TransGrid's prior written approval is required before any works may commence in the clearance zone.

- The developer is to pay for TransGrid to alter any transmission line earthing system required to be altered as a consequence of the proposed road upgrade;

Although outside the scope of this application, it is noted that the future road alignment of the proposed link road to the west through Jacfin appears to be in the SEPP alignment which is consistent with the requirements not to encroach into TransGrid's land in the south western corner of our site.

Should you require further information please contact TransGrid's, Property Planning and Development Manager T: (02) 9284 3207 | M: 0428 248 458

Yours faithfully

15.12.13

TransGrid
encl

Example of Required Working Platform for Transmission Tower Maintenance

330kV Transmission Tower Maintenance

OBJECT BEING CROSSED	DESIGN CODE OR AGREEMENT USED TO DETERMINE CLEARANCE	MINIMUM CLEARANCE (METRES				
		500kV	330kV	220kV	132kV	≤ 66kV
GROUND	TRANSGRID DESIGN CLEARANCE	11.0	9.0	8.0	7.5	7.5
GROUND	ELECTRICITY ASSOCIATION OF NSW CODE OF PRACTICE FOR ELECTRICITY TRANSMISSION AND DISTRIBUTION ASSET MANAGEMENT - SEE NOTE 2	(9.0)	(8.0)	(7.5)	(6.7)	(6.7)
GROUND	ELECTRICITY ASSOCIATION OF NSW CODE OF PRACTICE FOR ELECTRICITY TRANSMISSION AND DISTRIBUTION ASSET MANAGEMENT - SEE NOTE 3	(7.5)	(6.7)	(6.0)	(5.5)	(5.5)
POWER LINES	TRANSGRID DESIGN CLEARANCE SEE NOTE 4	7.0	5.5	4.5	3.5	2.5
TELEPHONE LINES	TRANSGRID DESIGN CLEARANCE SEE NOTE 4	SEE NOTE 5	5.5	4.5	3.5	2.5
TELEPHONE LINES	SAA HB103-1997 (CJC 7) CROSSINGS CODE SEE NOTE 2		(4.6)	(3.7)	(3.0)	(2.1)
RAILWAY LINES	TRANSGRID DESIGN CLEARANCE SEE NOTE 2	15.0	12.0	12.0	12.0	10.0
RAILWAY LINES	NSW STATE RAIL AUTHORITY AGREEMENT SEE NOTE 6	(10.7)	(10.7)	(10.7)	(10.7)	(8.8)
ROADWAYS	TRANSGRID DESIGN CLEARANCE FOR FREEWAYS, MOTORWAYS & MAIN ROADS UNLIKELY TO BE RETICULATED SEE NOTE 7 & 8	15.0	12.0	11.0	10.0	9.0
ROADWAYS	TRANSGRID DESIGN CLEARANCE FOR LOCAL COUNCIL ROADS UNLIKELY TO BE RETICULATED SEE NOTE 7 & 8	15.0	10.0	8.5	8.0	8.0
ROADWAYS	TRANSGRID DESIGN CLEARANCE FOR ROADWAYS LIKELY TO BE RETICULATED SEE NOTE 7 & 8	16.0	14.0	13.0	12.0	11.0
NAVIGABLE WATERS	TRANSGRID DESIGN CLEARANCE SEE NOTE 9	"SAFE CLEARANCE" PLUS 5.0 SEE NOTE 9				

TABLE 1
SEE NOTE 1

NOTES:

1. THE UNBRACKETED FIGURES SHOWN IN TABLE 1 ARE DESIGN CLEARANCES AND INDICATE THE MINIMUM CLEARANCE FROM CONDUCTOR TO GROUND OR SERVICES THAT SHOULD BE ACHIEVED IN THE DESIGN OF NEW OVERHEAD TRANSMISSION LINES. THE CLEARANCES SHOWN APPLY WHEN THE LOWEST CONDUCTOR OF THE OVERCROSSING SPAN IS AT MAXIMUM DESIGNED OPERATING TEMPERATURE.
2. IN SPECIAL CIRCUMSTANCES, SUBJECT TO APPROVAL BY THE MANAGER / TECHNOLOGY DEVELOPMENT, REDUCED CLEARANCES MAY BE ACCEPTED DUE TO ECONOMIC, ENVIRONMENTAL OR PHYSICAL CONSIDERATIONS. IN NO CIRCUMSTANCES SHALL THESE CLEARANCES BE REDUCED BELOW THE STATUTORY REQUIREMENTS LISTED (IN BRACKETS) IN THE APPROPRIATE CODE OR AGREEMENT DESCRIBED IN TABLE 1.
3. THE ELECTRICITY ASSOCIATION OF NEW SOUTH WALES CODE OF PRACTICE FOR ELECTRICITY TRANSMISSION AND DISTRIBUTION ASSET MANAGEMENT ALLOWS FOR REDUCED STATUTORY MINIMUM CLEARANCES OVER GROUND WHICH DUE TO ITS CONDITION IS NOT TRAVERSABLE BY VEHICLES.
4. FOR CROSSINGS OF EXISTING POWER OR TELEPHONE LINES, THE CLEARANCES SHOWN SHALL BE ACHIEVED WHEN THE LOWEST CONDUCTOR OF THE OVERCROSSING CIRCUIT IS AT DESIGNED MAXIMUM OPERATING TEMPERATURE AND THE HIGHEST CONDUCTOR OR EARTHWIRE OF THE UNDERCROSSING CIRCUIT IS AT MINIMUM DESIGNED OPERATING TEMPERATURE. IN SOME CIRCUMSTANCES, SUBJECT TO APPROVAL BY THE MANAGER / TECHNOLOGY DEVELOPMENT, A CLEARANCE LESS THAN THE DESIGN VALUE SHOWN IN TABLE 1 MAY BE ACCEPTABLE. THERE ARE NO STATUTORY MINIMUM CLEARANCES SPECIFIED IN THE ELECTRICITY ASSOCIATION OF NSW CODE OF PRACTICE APPLICABLE TO THE CROSSING OF OTHER POWER LINES OR TELEPHONE LINES.
5. THE SAA HB103-1997 (CJC 7) CO-ORDINATION OF POWER AND TELECOMMUNICATIONS - CROSSINGS CODE DOES NOT PERMIT CROSSINGS OF OVERHEAD TELEPHONE LINES BY OVERHEAD TRANSMISSION LINES OPERATING AT VOLTAGES GREATER THAN 330kV.
6. THE NSW - SRA AGREEMENT MAKES NO DISTINCTION BETWEEN REQUIRED CLEARANCES WHEN CROSSING RAILWAY LINES WITH TRANSMISSION LINES GREATER THAN 132kV.
7. CLEARANCES OVER ROADS SHOULD BE DETERMINED BY THE TYPE OF ROAD BEING CROSSED AND WHETHER OR NOT IT IS LIKELY TO BE AFFECTED BY LOWER VOLTAGE RETICULATION. TYPES OF ROADS HAVE BEEN BROADLY CLASSIFIED ACCORDING TO THE LIKELY PRESENCE OF RETICULATION AND THE APPROPRIATE DESIGN MINIMUM CLEARANCES ARE LISTED IN TABLE 1. DURING THE DESIGN STAGE OF A TRANSMISSION LINE, THE LOCAL DISTRIBUTION AUTHORITY SHOULD BE CONSULTED TO INDICATE ANY PROPOSALS FOR FUTURE DEVELOPMENT OF THEIR SYSTEM.
8. MINIMUM CLEARANCES ABOVE ROADS AS REQUIRED BY THE ELECTRICITY ASSOCIATION OF NSW CODE OF PRACTICE FOR TRANSMISSION LINES OPERATING AT VOLTAGES OF 66kV AND ABOVE ARE THE SAME AS THE BRACKETED FIGURES SHOWN IN ROW 2 OF TABLE 1, CLEARANCES TO GROUND.
9. CLEARANCES OVER NAVIGABLE WATERS ARE DETERMINED BY THE WATERWAYS AUTHORITY OF NSW. THE MINIMUM "SAFE CLEARANCE" FOR TRANSMISSION LINES ABOVE MAXIMUM HIGH WATER LEVEL AS DETERMINED BY THE AUTHORITY SHALL BE INCREASED BY 5 METRES FOR DESIGN PURPOSES.

AMENDMENTS
01 — NOTES 2 TO 9 AND TABLE 1 REVISED TO SHOW CURRENT REGULATIONS, CODES, AGREEMENTS, AUTHORITY NAMES AND TITLES. NAVIGABLE WATERS ADDED TO TABLE 1. NO CHANGES MADE TO MINIMUM CLEARANCE REQUIREMENTS IN TABLE 1. — DRN HA — CKD SWH — DATE 25-SEP-98

TransGrid

REFERENCE DRAWINGS

DRAWN HA/PE | DESIGN DG | CHECKED DD RS, ENG SH | PASSED SWH

cad DO NOT AMEND MANUALLY

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KKS CODING 7TD
ORIGINAL DRAWING APPROVED BY
B CORDEROY per SWH
MANAGER/TPE 25-FEB-1999
APPROVED
DRAWING STATUS
SCALE NONE

TransGrid
TRANSMISSION LINES
CONSTRUCTION - DESIGN
STANDARD MINIMUM CONSTRUCTION CLEARANCES FROM GROUND AND OTHER SERVICES CHART

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PLOT ISSUE NUMBER 20 | PLOT ISSUE DATE 25SEP98 | COPIED FROM | SUPERSEDES TL142021 | SUPERSEDED BY | INDEX CLASS'N 36 - 04

TRANSGRID EASEMENT GUIDELINES FOR THIRD PARTY DEVELOPMENT

Background

Transmission Line (TL) and cable easements are acquired by TransGrid to provide adequate clearance along the route of a transmission line for construction and maintenance work and also to ensure that no work or other activity is undertaken under or near the TL or cable which could create an unsafe situation either for persons or for the security of the TL or cable. The easement area contributes to the *prudent avoidance* of exposure by persons to EMF (Electric and Magnetic Fields).

The TL or cable easement area and its ongoing maintenance are control measures that cannot be compromised. The easement is established to prevent and mitigate against the following electrical safety risks:

- Infringement of electrical safety clearances e.g. due to an activity or vegetation growth.
- Electrical Induction e.g. due to parallel conducting materials.
- Step and touch potentials under fault conditions e.g. due to lightning or bushfire.
- Failure of structures or line equipment e.g. due to third party vehicle or plant impact.
- Transfer off easement of dangerous voltages, e.g. by services installed within the easement area.
- Blowout of a conductor under high wind (or blow in of vegetation) e.g. into an adjacent structure.

Safety to people and property is of paramount concern. TransGrid is also bound to maintain its infrastructure efficiently and cost effectively. TL and cable easements along with accesses thereto have been designed to facilitate effective operational maintenance.

Development Approval Process

Where the Environmental Planning and Assessment Act 1979 makes Local Councils the consent authority for development applications, proponents to a proposed development on land are to prepare a development application and submit same to the Local Council for development consent.

The *State Environmental Planning Policy (Infrastructure) 2007* (SEPP), which commenced on 1 January 2008, requires local councils to consult with Electricity Network Operators before granting development consent for proposals that might adversely affect:

- existing electricity infrastructure;
- easements for electricity purposes, even if no infrastructure has yet been constructed in the easement.

Local Councils must give written notice to the network operator of any proposals for development:

- within or immediately adjacent to an easement for electricity purposes;
- immediately adjacent to a substation;
- within 5 metres of an exposed overhead power line;
- involving excavation within 2 metres of an underground power line or a pole or within 10 metres of a tower;
- involving a swimming pool within 30m of a transmission tower or within 5m of an overhead line.

Any comments made by the Electricity Network Operator within 21 days of receiving Local Council's written notification must be taken into consideration by the Local Council before it determines the development application.

The *proponent* is required to consult with TransGrid in accordance with the *State Environmental Planning Policy (Infrastructure) 2007* (SEPP); the *NSW Occupational Health and Safety Act 2000,* and; the *NSW WorkCover Code of Practice for Working Near Overhead Power Lines 2006*.

TransGrid Approval

The approving statutory authority will require written approval from TransGrid for all proposed activities within an easement area in accordance with Section 45 of the *State Environmental Planning Policy (Infrastructure) 2007 (SEPP)*.

To assess and respond to an approving statutory authority, TransGrid will require the following information from the development proponent. TransGrid will object to any development where the development proponent has not provided the following information to TransGrid prior to Local Council's notification:

- Detailed specifications and plans drawn to scale and fully dimensioned, showing property boundaries and other relevant information.
- An *Impact Assessment* of the development on TransGrid infrastructure and associated interests (including easements). Further, details as to how any impacts thereto are proposed to be managed, mitigated or resolved (see below – *Impact Assessment*).

Upon receipt of the abovementioned documentation, the proponent's proposed development will be assessed in relation to its impact on TransGrid infrastructure, easements and means of access thereto. The proponent should note that for complicated proposals the consultation process will be iterative and the proponent should allow sufficient time for this process (see *Timeframes* below).

General *Development Proposal* Guidelines

1. Prohibited Activities and Encroachments

A number of activities and encroachments are not permitted within the easement area. These are detailed in the "TransGrid Easement Guide" (see Appendix 1 - *Prohibited Activities*).

Any *Development Proposal* should be designed in such a way that:

- It does not involve these activities, nor introduce these encroachments; and
- Does not to encourage other parties to undertake such activities or introduce such encroachments in the future.

2. Development

The *Development Proposal* should be planned with the adoption of The Right Honourable Harry Gibbs Report (*Inquiry into Community Needs and High Voltage Transmission Line Development*) recommendations, that being a policy of "*prudent avoidance*".

This report placed recommendations on the design of new transmission lines having regard to their proximity to houses, schools, work sites and the like and is equally valid when considering new developments proposed in proximity to existing powerlines and associated easements.

Electric and Magnetic Field (EMF) strength rises from the easement edge to beneath the conductors and the most practical way to achieve the *prudent avoidance* policy is to keep the development entirely outside the easement area.

If it is desired to place any part of a development within an easement the proponent shall, in conjunction with the *Development Proposal*, undertake an *Impact Assessment* to be provided to TransGrid that covers the changes in risk and mitigation measures proposed.

Relocating Infrastructure and Interruption to Transmission

The developer will be liable for any costs involved in having to relocate TransGrid infrastructure as part of any proposed development. Further, the developer will also be liable for any costs and penalties incurred as a consequence of interruptions to TransGrid's transmission operations arising from the development, whether planned or inadvertent.

Impact Assessment

An *Impact Assessment* shall be completed and is to accompany the development proposal when it is submitted to TransGrid for consideration.

The *Impact Assessment* shall cover:

1. Detailed description of the development
2. Health and safety risk assessment and control measures
3. Operational risk to the TL or cable due to the development
4. Maintenance risk to the TL or cable due to the development
5. Design and construction risk to the TL or cable and associated with the proposed development
6. Physical impact risk to the TL (vehicle collision, vegetation or other impact)
7. Risk to TransGrid's rights and entitlements
8. Impact of the proposed development re TransGrid's access to the easement and along the easement.

Checklist

The following checklist may assist in the completion of the *Impact Assessment.* A template is provided in *Appendix 3*.

Refer also to *Appendix 1* and *Appendix 2* for guidance on prohibited activities and TransGrid's requirements for developments and subdivisions.

1. **Detailed Description of the Development**

- Street Address;
- Land and Title references;
- Physical proximity of the proposed development to TransGrid's easement boundary (distance dimensions to be provided on a scaled plan); and
- Horizontal and vertical clearances of the proposed development to TransGrid's Infrastructure and associated easements

2. **Health and Safety Risk Assessment**

- **Safety Risk to General Public**

i. Have ground levels been changed that would compromise design clearances?
ii. Has the easement been altered in any way that would encourage prohibited activities to occur within the easement?
iii. Has the easement or the nature of the land in the vicinity of the easement, been altered in any way that would encourage prohibited encroachments to occur within the easement?
iv. Is it possible for proposed structures to transfer voltages off easement, or bring remote earths into the easement?
v. Has development been proposed that increase step and touch potential hazards, or that would encourage people to congregate within the step/touch potential zone of a structure?

- **Safety Risk to Non-electrical Workers and Emergency Service Personnel**

i. Has infrastructure been proposed that can be climbed compromising design clearances?
ii. Has infrastructure been proposed that can be accessed by maintenance persons using Elevated Work Platforms (EWPs) compromising design clearances?
iii. Has infrastructure been proposed that can bring remote earths onto the easement?
iv. Has infrastructure been proposed that is a fire hazard, or that would encourage the storage or use of flammable material on the easement?
v. Has infrastructure been proposed that would require emergency workers (such as fire fighters) to come near, or their equipment to come on or near high voltage conductors?

- **Safety Risk to TransGrid Employees & Contractors**

  i. Has access around any TransGrid structure been altered preventing EWPs, crane or other plant access or introduced other risks to maintenance staff?
  ii. Has the proposed development complied with TransGrid's horizontal clearances?
  iii. Has access to the easement been altered that would introduce risks to personnel, including although not limited to asset inspectors or patrol staff?

- **Health Risk to the General Public**

  i. Have public spaces been proposed *within the easement* that would encourage persons to congregate for lengthy periods of time?
  ii. Have facilities been provided outside of the easement but immediately adjacent thereto that would encourage persons to congregate within the easement?

3. Operational Risk

- Have any ground level developments been proposed (including roads, driveways, parking lots and turning bays etc) that would expose TransGrid transmission structures and lines to impact risk?
- Has change in water flows or drainage been proposed that could impact on the foundations of any TransGrid structure (or guy)?
- Are excavations or surface activities proposed that would impact a TransGrid structure's foundations, stability or earthing systems?

4. Maintenance Risk

- Have roads, driveways or landscaping been proposed that would prevent or hinder TransGrid maintenance, or increase maintenance costs, for the above or below ground components of the transmission line structure?
- Has access to the easement or within the easement, been obstructed, restricted or altered?
- Have access roads, bridges, crossings and the like been designed to cater for the weight and size of TransGrid maintenance plant (EWPs and Cranes)?
- Does the development encourage the placement of obstructions that would prevent access for routine or emergency works?

5. Development Design and Construction Risk

- Has the development been designed so that during the construction phase TransGrid is not restricted from undertaking normal maintenance and inspection activities?
- Has the development been designed so that during the construction phase prohibited activities or encroachments are not required in the easement area?
- Has the design health and safety risk assessment taken into account the requirements of the NSW WorkCover Code of Practice for *Working Near Overhead Powerlines* 2006?

6. TransGrid's Rights

- Have TransGrid's existing rights been preserved?
- Has TransGrid been exposed to new maintenance costs (e.g. landscaping or other development changes impacting easement access, use and maintenance)?
- Does a new deed of easement need to be negotiated?

Post Construction Compliance Statement

The development proposal shall include as-built plans of the final construction that must be provided to TransGrid. The as-built drawings must be accurate, scaled and display distances/measurements, demonstrating compliance to the agreed plans and implementation of agreed control measures.

Timeframes

TransGrid will respond to a Local Council notification of a proposed development within 21 days as required in the SEPP, however that response may not be an approval (or disapproval). If the development proposal does not meet the requirements of these Guidelines, or in the event further detailed engineering analysis is required, TransGrid will require the development proposal to be revised and resubmitted.

Developers are advised to consider TransGrid's requirements early in the process (and not as an afterthought that could result in project delays).

Further Assistance

For any further development enquiry assistance please contact the Development Enquiry Services Coordinator on Telephone (02) 9620 0777.

TRANSGRID EASEMENT GUIDELINES FOR THIRD PARTY DEVELOPMENT

APPENDIX 1

Prohibited Encroachments and Activities

TransGrid will use its powers under the Electricity Supply Act, involve WorkCover or take other legal action as required to prevent or halt prohibited activities.

1. Transmission Lines

Activities and encroachments that are **prohibited** within a Transmission Line (TL) Easement include, but are not limited to *(Note 2)*, the following:

- The construction of houses, buildings, substantial structures, or parts thereof.
- The installation of fixed plant or equipment.
- The storage of flammable materials, corrosive or explosive material.
- The placing of garbage, refuse or fallen timber.
- The planting or cultivation of trees or shrubs capable of growing to a height exceeding 4 metres.
- The placing of obstructions other than timber boundary fences within 15 metres of any part of a transmission line structure or supporting guy.
- Camping or the permanent parking of caravans or other camping vehicles.
- The parking or storage of flammable liquid carriers or containers.
- The installation of site construction offices, workshops or storage compounds.
- Flying of kites or wire controlled model aircraft within the easement area.
- Flying of any manned aircraft or balloon within 30m of any structure, guy or conductor.
- Flying of remote controlled or autonomous aerial devices (such as UAVs) within 30m of any structure, guy or conductor.
- Placing any obstructions on access tracks or placed in the easement area that restricts access.
- Any vegetation maintenance (such as felling tall trees) where the vegetation could come within the *Ordinary Persons Zone* – refer to the NSW WorkCover '*Working Near Overhead Powerlines - Code of Practice 2006'.*
- Any substantial excavation within 7 metres of a pole or supporting guy or guy foundation or within 16 metres of a tower
- The climbing of any structure (*any development that encourages or facilitates climbing will not be permitted).*
- Any change in ground levels that reduce clearances below that required in AS7000.
- The attachment of any fence, any signage, posters, or anything else, to a structure, or guy.

  Note: Interference to electricity infrastructure is an offence under the Electricity Supply Act.
- The movement of any vehicle or plant between the tower legs, within 5m of a structure, guy or between a guy and the pole.
  Note: Any damage to electricity infrastructure is an offence under the Electricity Supply Act.
- The storage of anything whatsoever within the tower base or within 5m of any tower leg.

- Any structure whatsoever that during its construction or future maintenance will require an *Accredited* person to access. *Note: The final structure may meet AS7000 clearances, but may be accessible* (e.g. by EWP) by Ordinary Persons within the Ordinary Persons Zone.
- Any work that generates significant amounts of dust or smoke that can compromise the TL high voltage insulation.
- The erection of any structure in a location which could create an unsafe situation work area for TransGrid staff.
- Any activity by persons not *Accredited* or not in accordance with the requirements of the WorkCover *'Working Near Overhead Powerlines - Code of Practice 2006'* that is within *(Note 1)*:
    - 3m of an exposed 132kV overhead power line
    - 6m of an exposed 220kV or 330kV overhead power line
    - 8m of an exposed 500kV overhead power line

  Note: Distances quoted are to the design conductor position (i.e. maximum sag and blowout)

The following activities may be approved with conditions. TransGrid's prior written consent is required. The proponent will have to demonstrate (using the *Impact Assessment* process) that the risks associated with the activity have been satisfactorily mitigated. Guidance on how to achieve this is provided in Appendix 2.

- Burning off or the lighting of fires. Lighting of fires directly under energised conductors will not normally be approved.
- Operation of mobile plant or equipment having a height when fully extended exceeding 4.3 metres.

  Note: Approval would be based on the need to maintain adequate clearance between the equipment and the line, having regard to the particular situation. Note that plant may require trailing earths and supervision by TransGrid staff.

- *Temporary* parking of caravans and other large vehicles in the outer 3m of the easement area, subject to a 4.3 metre height restriction and metallic parts being *earthed*.
- The erection of flagpoles, weather vanes, single post signs, outdoor lighting, subject to a 4.3 metre height restriction and metallic parts being *earthed*.
- The erection of non-electric agricultural fencing, yards and the like.

  Note: Fencing that exceeds 2.5 metres in height or that impedes would not be approved. Metallic fencing may require earthing and will generally not be approved if located within 15 metres of any part of a transmission line structure or supporting guy or within 4 metres of the vertical projection of the overhead conductors.

- The erection of electric fencing provided that the height of the fencing does not exceed 2.5 metres and provided that the fence does not pass beneath the overhead conductors.

  Note: Approval may be given for a portable electric fence to pass underneath the conductors provided that it is supplied from a portable battery-powered energiser that is located remotely

from frequented areas. Where it is necessary for a permanent electric fence to pass beneath the overhead conductors, or where an extensive permanent electric fencing system is installed in proximity to a transmission line certain additional safety requirements may be required.

- The installation or use of irrigation equipment inside the easement.

  NOTE: An irrigation system will not be approved if it is capable of coming within 4 metres of the overhead conductors; exceeds 4.3 metres in height; consists of individual sections of rigid or semi-rigid pipe exceeding 4.3 metres; and/or is capable of projecting a solid jet of water to within 4 metres of any overhead conductors.

- The installation of *low voltage* electricity, telephone, communication, water, sewerage, gas, whether overhead, underground or on the surface.

  Note: Services that do not maintain standard clearances to the overhead conductors that are within 15 metres from the easement centre-line, 16 metres from any part of a transmission line supporting structure or are metallic and within 30 metres of any part of a structure will not be approved. TransGrid may impose additional conditions or restrictions on proposed development.

- The installation of high voltage electricity services, subject to there being no *practicable* alternative and provided the standard clearances are maintained to the supporting structures.

  Note: Where extensive parallels are involved certain additional safety requirements may be imposed by TransGrid, depending on the particular case and engineering advice.

- Swimming pools, subject to TransGrid's strict compliance criteria.

  Note: Above ground pools will not be approved. In-ground pools will not be approved if there is a practicable alternative site clear of the easement area. If there is no practical alternative site, in-ground pools including coping will not be approved if it encroaches more than 4.5 metres, or is less than 30 metres away from a transmission line structure.

- Detached garages, detached carports, detached sheds, detached stables, detached glass houses, caravans, site containers, portable tool sheds, pergolas and unroofed verandahs attached to residences. (Easement encroachments of more than 3m will not be approved).
- Prefabricated metal (garden) sheds. TransGrid approved sheds must be earthed.

  Note: Sheds exceeding 2.5 metres in height, with a floor area exceeding 8 m^2, encroaching more than of up to 3 metres or within 15 metres of any part of a transmission line structure will not be approved. Connection of electric power will not be approved.

- Single tennis courts.

  Note: Tennis courts that hinder access, are for commercial use or do not provide adequate clearances shall not be approved.

- Sporting facilities and open recreational areas.

  Note: Facilities associated with the use of firearms and public sporting venues are discouraged.

- Subdivisions. See ***Appendix 2*** requirements.

- Roads, subject to horizontal and vertical clearances. Restrictions and other conditions on consent may also apply.

  Note: Roads located within 15 metres of any part of a transmission line structure will not be approved.

  Where it is proposed that a road passes within 30 metres of a transmission structure or supporting guy, TransGrid may refuse consent or impose restrictions and other conditions on consent. Where a road passes within 30 metres of a transmission structure or supporting guy, the structure's earthing system may require modification for reasons including, but not limited to, preventing fault currents from entering utility services which may be buried in the road. The option of raising conductors or relocation of structures, at the full cost of the proponent, may be considered.

- Cycleways, walking tracks and footpaths, provided *standard clearances* are maintained and the proposal does not alienate large sections of the easement area.
- Excavation – subject to restriction criteria.

  Note: Substantial excavations located within 7 metres of a general purpose pole structure or supporting guy, or within 15 metres of any part of a steel tower or major pole structure and exceeding a depth 3 metres will not be approved.

- Quarrying activities, earthworks, dam or artificial lake construction.
- Mining. Approval would be based on the merits of the proposal and any related circumstances.
- Use of explosives.
- Vehicle access or parking facilities.

  Note: Vehicle access and/or car parking facilities will not be approved if within 30 metres of a TL structure without adequate precautions provided to protect the structure from any accidental damage.

Note 1: An encroachment or activity that is located outside the prohibited distance of the infrastructure but still within the easement will not necessarily be permitted. It will generally need to be addressed in the Impact Assessment and remains subject to TransGrid prior consent.

Note 2: The above list is not exhaustive and if there is any uncertainty as to whether an activity or encroachment is acceptable within an easement, please contact TransGrid.

2. Cables

The activities listed below are prohibited within cable easements:

- The storage of flammable liquids or explosives.
- The planting or cultivation of trees or shrubs with extensive root systems.
- The construction of houses, buildings or substantial structures.
- The installation of fixed plant or equipment.
- The placing of garbage, refuse or fallen timber.
- Vertical boring directly over the cable lay (eg. the installation of fencing or safety railing).
- The raising or lowering of existing ground surface levels.
- Any excavation within *2m* of an underground cable.

The following activities may be approved with conditions. TransGrid's prior written consent is required. The proponent will have to demonstrate (using the *Impact Assessment* process) that the risks associated with the activity have been satisfactorily mitigated. Guidance on how to achieve this is provided in Appendix 2.

- Parking of vehicles.

  Note: Parking will be prohibited if the surface is not capable of supporting the vehicles likely to be parked, risking the crushing of the cable/ducts or erosion of the ground.

- The operation of mobile plant and equipment.

  Note: Such operations will be prohibited if the surface is not capable of supporting the vehicles likely to be parked, whereby risking the crushing of the cable/ducts or erosion of the ground.

- The erection of structures spanning the easement.
- Excavation.
- Concrete driveways.
- The installation of metal pipes, metal fences, underground or overhead cables.
- Road-boring in the vicinity of a high voltage cable.

TRANSGRID EASEMENT GUIDELINES FOR THIRD PARTY DEVELOPMENT

APPENDIX 2

General Requirements for Developments and Subdivisions

The following list of current general requirements is provided for your information. It should be noted that the list is not exhaustive and, where there is any doubt concerning a particular activity within the easement area advice should be sought from TransGrid.

1. Completed Works

The completed works shall provide for the following considerations:

- A safe unobstructed working platform shall be preserved around the transmission line structures for access by EWP, cranes as well as other large plant and equipment. No obstructions of any type shall be placed within 30 metres of any part of a transmission line structure.
- Roads, streets etc (including kerb to property boundaries) and intersections shall not be located within 30 metres of any TL structure.
- Roads crossing the easement require 12 metre clearance between the finished road surface and the conductor at it's maximum operating temperature.
- Roads paralleling the transmission line are not to be within the easement area.
- Proposed roadway locations shall also take into consideration any street lighting requirements to ensure that statutory clearance requirements are followed. The design clearances should include future maintenance safety issues. TL outages will not be provided for street light maintenance.
- Details of the levels of proposed roadways where they cross the easement shall be submitted to TransGrid for written approval prior to construction to ensure that adequate clearances to the TL conductors are maintained. It should be noted that formal approval will not be given to the subdivision if such clearances are not maintained.
- Access to the TL and its structures shall be available at all times for TransGrid plant and personnel. In this regard a continuous and unobstructed access way shall be retained along the easement.
- Where fences are required for security purposes access gates will be installed in an agreed location and a TransGrid lock will be fitted.
- All underground services installed more than 16 metres but within 30 metres of a TL structure shall be non-metallic. Utility services (including street lighting), whether above or below ground, shall not be installed without prior written approval of TransGrid.
- Excavation work or other alterations to existing ground levels shall not be carried out within the easement area without the prior approval of TransGrid. Approval will not normally be granted for such work within 16 metres of any supporting structure.
- Fenced boundaries for all new properties in the subdivision shall not be within 30 metres of any TL structure.
- A "Restriction-as-User" (88B Instrument) shall be placed on the titles of the lots affected by the TL easement. Any proposed activity within an easement area will require the prior written approval of TransGrid (appropriate wording will be advised when required).
- Any proposed development does not impact on TransGrid's costs of inspecting, maintaining or reconstruction the transmission lines.
- Vegetation Control
  In order to comply with its statutory responsibilities to maintain adequate clearance between the conductors and any forms of vegetation. TransGrid maintains its easements as follows:

- Tall growing species likely to infringe safe clearances are to be removed regardless of existing height at time of construction.
- Trees likely to fall onto conductors or towers are also to be removed whether on the easement or off the easement (ref. Sec 48 of the Electricity Supply Act 1995).
- Shrubs and other vegetation of lower mature height within the easement will be reduced and managed, generally by slashing with ground level retained.
- Vegetation management will aim to reduce available fuel and subsequent bushfire risks in accordance with NSW Rural Fire Service Bush Fire Environmental Assessment Code, which sets out requirements for hazard reduction strategies such as Asset Protection Zones and Strategic Fire Advantage Zones
- Removed vegetation will be mulched or chipped and removed from site or retained on site in accordance with owner/stakeholder requirements and
- Other works considered necessary in order to provide a safe working environment for maintenance staff, contractors and for the property owner/manager will be undertaken.

Proposed vegetation plantings, such as Riparian corridors, within the transmission line easements shall be compatible with the above maintenance requirements.

2. Construction

During construction, the development plans shall also provide for the following considerations:

- Vehicles, plant or equipment having a height exceeding 4.3 metres when fully extended shall not be brought onto or used within the easement area without prior TransGrid approval.
- Where temporary vehicular access or parking (during the construction period) is within 16 metres of a transmission line structure, adequate precautions shall be taken to protect the structure from accidental damage. Plans need to be submitted to TransGrid for prior approval.
- The easement area shall not be used for temporary storage of construction spoil, topsoil, gravel or any other construction materials.

3. Costs

The Developer shall bear all costs of any reconstruction or modification of the transmission line, including consultation and design required to maintain clearances due to proposed ground level changes; road crossings within the easement; or due to any damage to the TL arising from the development.

TRANSGRID EASEMENT GUIDELINES FOR THIRD PARTY DEVELOPMENT

APPENDIX 3

Impact Assessment Template

Detailed Description of the Development

Risk Type	Aspect	Drawing Reference	Assessment	Risk Level	Control Measure	Residual Risk
Health and Safety						
Operational						
Maintenance						
Design and Construction						
Rights and Entitlements						

Compliance plan