

**APPENDIX K: OVERHEAD LINE SECTION: WAIKATO DISTRICT COUNCIL
Route Sections 6–9, Towers 82–193) CONDITIONS**

Documents

1. Subject to the conditions below, the initial works to give effect to the designation shall be generally in accordance with Maps 52–68 in Appendix V and Map 10 (*Transpower North Island Grid Upgrade Project Notice of Requirement for Designation/Matamata-Paiko District Plan Map 10 – Motumaoho-Tahuroa*) being page 137 of Part 1A of the Notices of Requirement Documentation (dated April 2007).

Tower heights and locations

2. Tower heights and locations, except in relation to towers 88 and 89, shall be generally in accordance with the plans and profiles, except that:
 - (a) tower height can exceed that shown on the plans and profiles by up to three metres;
 - (b) where tower locations are moved in accordance with (d) and (e) below, tower heights can exceed those in the plans and profiles by up to five metres;
 - (c) no tower shall exceed 70 metres in height;
 - (d) tower sites may be moved up to five metres laterally;
 - (e) tower sites may be moved up to 40 metres along the alignment.
3. Tower heights and locations for towers 88 and 89 shall be in accordance with Map 53 in Appendix V. Towers 88 and 89 shall not be relocated, except with the prior written consent of the affected landowners and holders of the affected mineral rights. The heights of towers 88 and 89 can exceed that shown on the plans and profiles by up to three metres.
4. Transpower shall include additional engineering measures in its design and construction of the foundation of towers 88 and 89 to provide additional mitigation to allow for possible ground movement caused by future mining activities carried out in accordance with condition 5 below. Such measures may include increased foundation depths and possible installation of tie beams to allow for differential settlement. Provided towers 88 and 89 are constructed to provide additional mitigation for ground movement caused by

future mining activities, Transpower is not required to provide mitigation following construction and commissioning of the towers to address unstable batter slopes potentially caused by future mining activities.

Activities under the line

5. The construction, operation and maintenance of towers 88 and 89 and the overhead 400kV capable transmission line, shall be undertaken in such a manner as to not unreasonably hinder or preclude the use and development of land legally described as Part Allotment 57 Parish of Maramarua and Lot 3 DPS 1453 (unique identifies SA5A/133 and SA58C/221) (Maxwell Block) for open pit mining operations that incorporate the following agreed restrictions:
- (a) the top of any open pit batter slope does not extend inside a circle with a radius of 45 metres from the centre peg of tower 88 and 52 metres from the centre peg of tower 89;
 - (b) an overall maximum batter slope of no greater than 1.6 metre horizontal to 1.0 metre vertical;
 - (c) a minimum of 12.7 metres clearance of ground level from the overhead 400kV capable transmission line at maximum operating temperature;
 - (d) a minimum of six metres clearance of any plant or equipment from the overhead 400kV capable transmission line at maximum operating temperature; and
 - (e) no buildings shall be constructed within the designated corridor for the overhead 400kV capable transmission line.

Cultural / spiritual

6. If any urupā, traditional sites, taonga (significant artefacts) or kōiwi (human remains) are exposed during site works, then the following procedures shall apply:
- (a) works in the immediate vicinity of the site that has been exposed shall cease;
 - (b) the site supervisor shall immediately secure the area in a way that ensures that any remains or artefacts are untouched;

- (c) the site supervisor shall notify representatives of relevant tāngata whenua, the New Zealand Historic Places Trust, Waikato District Council and, in the case of human remains, the New Zealand Police; and
- (d) The notification in (c) above shall allow such persons being given a reasonable time to record and resolve archaeological features discovered before work may recommence.

Archaeology: known archaeological site S12/253

7. Before any works associated with the Upper North Island Grid Upgrade Project are carried out in the vicinity of site S12/253, Transpower shall undertake the following:
- (a) All proposed access routes for tower 94 shall be archaeologically surveyed by the suitably qualified and experience archaeologist (project archaeologist) prior to the Site Works Plan (SWP) required by condition 41 being finalised. The Site Works Plan shall insofar as it relates to proposed access routes be altered, where practicable, to accommodate any archaeological findings.

Archaeology: known site S13/30

8. Before any works associated with the Upper North Island Grid Upgrade Project are carried out near Site S13/30, Transpower shall undertake the following:
- (a) The locations for towers 140A, 140B and 141, as well any rerouting of the race route, shall (subject to obtaining all necessary statutory approvals) be archaeologically investigated prior to site works commencing.
 - (b) Any vegetation shall be removed in a manner which does not affect Site S13/30.
 - (c) The Site Works Plan required by conditions 41–43 for tower 141 states that:
 - (i) contractors be aware of the possibility that archaeological evidence may be present.

- (ii) if the contractors have any doubts as to the nature of materials found in excavations they should stop work to enable the project archaeologist to assess the materials.

Archaeology: known site S13/18

9. The earthworks for tower 161 shall be monitored by the project archaeologist and any evidence recorded in accordance with standard archaeological practice.

Archaeology: towers 173–175

10. Before the Site Works Plans in relation to towers 173–175 are finalised, the project archaeologist shall undertake an archaeological survey of the tower sites and the proposed access routes to those tower sites.

Advice note:

1. Conditions 7–10 are subject to any conditions of any archaeological authority granted under the Historic Places Act 1993.

Social

11. Transpower shall prepare a counselling/stress relief plan, after consultation with the territorial authority. The plan shall include:
 - (a) an offer of counselling to those persons directly affected by the designation crossing their property to manage undue stress related to implementing the Upper North Island Grid Upgrade Project;
 - (b) an 0800 number for the service;
 - (c) no requirement for contact with Transpower personnel to access the service;
 - (d) such offer remaining open for acceptance for the period ending six months after confirmation of the designation; and
 - (e) such offer extending to a maximum of four counselling sessions, which may occur beyond the period referred to in (d) above, but which must be completed within 12 months of confirmation of the designation.
12. The implementation of the counselling/stress relief plan, and any counselling of directly affected persons, shall be at Transpower's cost.

13. Transpower shall not be in breach of the condition 11 if the offer of counselling is not taken up by any directly affected persons.

Electric and Magnetic Fields (EMF)

14. The works shall be designed and constructed to limit the EMF exposure to the *International Commission on Non-Ionising Radiation Protection Guidelines for limiting exposure to time varying electric, magnetic, and electromagnetic fields (up to 300 GHz) (Health Physics, 1998 74(4): 494–552)* (ICNIRP Guidelines) public reference levels of 5 kV/m for electric fields and 100 μ T for magnetic flux density at one metre above ground under maximum normal operating conditions (ie, when there are no faults in the transmission system).
15. In order to reduce long-term public exposure to EMFs no habitable building shall be constructed within the designated corridor for the 400-kV capable transmission line.

Earth potential rise / induced currents

16. In designing and constructing the line, Transpower shall give consideration to third-party conductive structures and services to ensure compliance with regulations 58, 60, 69 and 87 of the Electricity Regulations 1997 as in force at the date of confirmation of the designation.
17. The works shall be designed and constructed to comply with AS/NZS4852:2000 *Electrical Hazards on Metallic Pipelines*.
18. Prior to commissioning, Transpower shall have an appropriately qualified person assess all conductive structures in the vicinity of the transmission line. Any hazard shall undergo a risk assessment in accordance with the Electricity Engineers' Association *Guide to Risk-Based Earthing System Design*. Transpower will carry out mitigation measures to address significant risks relating to earth potential rise and induction effects associated with the line.

Radio frequency interference

19. All works shall be designed to comply with NZS 6869:2004 *Limits & Measurement Methods of Electromagnetic Noise from High-Voltage a.c. Power Systems, 0.15 to 1000 MHz*.

Operational noise

20. The operation of the transmission line shall not emanate a noise that exceeds a limit of 40 dBA L_{eq} beyond the boundaries of the designation. Measurements shall not be undertaken during heavy rain.
21. Sound levels shall be measured and assessed in accordance with NZS6801:1991 *Measurement of Sound* and NZS6802:1991 *Assessment of Environmental Sound*.

Landscape mitigation**General**

22. Within two months of confirmation of the designation, Transpower shall appoint a suitably qualified and experienced landscape architect for the role of certifying that any of the thresholds in conditions 29 and 31 have been reasonably met (the landscape certifier). The person appointed shall be endorsed by the NZ Institute of Landscape Architects in writing as suitable for the role, having been advised of the role and responsibilities.
23. Any decision made by the landscape certifier in relation to the matters addressed in conditions 29(b) and 31 shall be in writing (including reasons).
24. Any landowner may ask the landscape certifier to certify that any decision under conditions 29(b) and 31 is reasonable given the thresholds in those conditions. The landscape certifier shall set his or her own procedure for any such certification.

Landscape mitigation: private land

25. Within two months of confirmation of the designation, Transpower shall write to the owners of:
- (a) properties having an occupied house, existing at the date of the Board's draft decision on the Notices of Requirement, within one kilometre of the centre line of the designation; and
 - (b) the following property

317 Kopuku Road,

which is beyond one-kilometre distance from the centre line, but where the likely effects have been assessed as moderate.

- 26.** The letter shall inform the landowner/s of the properties referred to in condition 25 of their possible entitlement to a landscape mitigation assessment in accordance with condition 29 (including where relevant, ecological planting). This condition shall not apply to any property where an agreement relating to landscape mitigation has already been reached between Transpower and the landowner.
- 27.** The written offer required by condition 25 shall inform the landowner that he/she may request Transpower to consider landscape mitigation (including where relevant, ecological planting) at his/her option prior to, or after, construction of the overhead line, and outline the process established by these conditions (including the role of the landscape certifier).
- 28.** Within two months of commissioning of the line, Transpower shall repeat the offer required by condition 25 to all landowners who have not already indicated preliminary acceptance of Transpower's offer. Transpower shall expressly state that the offer shall remain valid for 12 months following commissioning of the overhead line.
- 29.** In the case of each landowner who has indicated acceptance of the offer of landscape mitigation assessment (including where relevant ecological planting), the following process shall be adhered to:
- (a)** An onsite meeting shall be arranged between the landowner and a qualified landscape architect (the landscape architect) and where relevant an ecologist, appointed by Transpower.
 - (b)** The landscape architect shall determine whether mitigation is appropriate in terms of the criteria in Table 1. If the determination is that no mitigation is appropriate, the landscape architect shall advise Transpower with reasons, and Transpower shall advise the landowner in writing.
 - (c)** Subject to (d), if the landscape architect identifies that mitigation is appropriate in terms of the criteria in Table 1, he/she shall prepare a plan (the concept plan) to mitigate the adverse visual effects of the overhead line when viewed from the dwelling and the immediate curtilage of the dwelling. The mitigation techniques shall take into account the factors and criteria in Table 1.
 - (d)** For properties where ecological planting has been identified in Table 2, the concept plan required by (c) shall be prepared by the

landscape architect, in consultation with the ecologist, taking into account the criteria in Table 2.

Table 1

Factors	Criteria
Degree of Likely Visual Amenity Effect	<ul style="list-style-type: none"> Moderate to very high degree of effect
Basis for Assessment of Degree of Effect	<ul style="list-style-type: none"> Distance from the line and towers Orientation of the house and outdoor living areas Existing screening and nature of intervening landscape Relative elevation
Mitigation Technique	<ul style="list-style-type: none"> Planting that may screen or partially screen towers Planting that may create an alternative foreground focus Planting that may focus the outlook on an alternative view Planting that may increase the sense of depth in a view towards the line
Practicality	<ul style="list-style-type: none"> Land available in the resident's ownership for landscape mitigation Existing garden design or landscape constraints Farm management constraints
Owner's Preference	<ul style="list-style-type: none"> Preferences identified during the consultation and design process

Table 2

Relevant Towers	Proposed Replacement Planting and Purpose
Span 111–113 (Beale, evidence in chief para 28(e))	<ul style="list-style-type: none"> Plantings of shrubs and pioneer tree species that attain a height at maturity no greater than 14 metres, along the designation within the large kahikatea fragment affected by tower 112 that is not required as a maintenance accessway. Plantings of kahikatea, tōtara and kōwhai adjacent to the eastern side of the stand beyond the designation or alternatively within the corridor created by the ARI-PAK A line removal, to offset the loss of trees removed.

30. The concept plan shall be prepared in draft, and following review by Transpower, shall be submitted to the landowner for comment.

31. The concept plan shall be reviewed by the landscape architect, in consultation with the ecologist (where relevant), following the receipt of comments, and following such further consideration, investigation and discussion with the landowner and Transpower as the landscape architect considers necessary, taking into account the criteria in Table 1 and the cost and practicality of implementing any specific request. The revised plan (the final plan) will be provided to the landowner as soon as reasonably practicable.
32. On receipt of written acceptance of the final plan, Transpower shall implement it within the first planting season following that acceptance, unless otherwise agreed with the landowner.
33. Transpower shall maintain the planting for 12 months after completion of planting.
34. In the event that a landowner advises Transpower that the landowner wishes to implement the final plan themselves, within 30 days following completion of all work specified in the final plan to the reasonable satisfaction of the landscape architect, Transpower shall pay the landowner the sum of money allocated in the approved concept plan. Where this occurs, condition 32 shall not apply.
35. In the event that a landowner advises Transpower that the landowner wishes to maintain the planting themselves, within 30 days following completion of all works specified in the final plan, Transpower shall pay the landowner the sum of money allocated in the approved concept plan for maintenance. Where this occurs, condition 33 shall not apply.

Landscape mitigation: public land

36. Within 12 months of confirmation of the designation, Transpower shall write to the Waikato District Council (Council), and where relevant NZTA, informing it or them of its proposal to carry out landscape mitigation along specific sections or locations of roads and State highways in the Council's district, as shown on Maps 32–39 in Appendix V, and seeking the Council's involvement in implementing the mitigation. The offer shall be for the purpose of mitigation of adverse visual effects of the overhead line when viewed from the public roads or other viewpoints shown in the plan.
37. On receiving a positive response from the Council and/or NZTA (as applicable), Transpower shall provide a draft development plan,

specifications, and costing prepared by a qualified landscape architect as an offer to the Council and/or NZTA. The offer shall remain open for 12 months following commissioning of the line.

38. Transpower shall review any comments provided by the Council and/or NZTA and shall issue a final plan. The final plan shall be provided as soon as practicable to the Council and/or Transit.
39. On the Council's and/or NZTA's written acceptance of the plan (where relevant) and agreement to implement the mitigation, Transpower shall, within 30 days, pay to the Council and/or NZTA the cost specified in the accepted plan (which shall include an estimate for a year of maintenance).
40. Transpower shall not be in breach of condition 36 to 39 in the event the Council and/or NZTA do not undertake the planting as provided in the final plan.

Pre-construction activities

41. Prior to construction commencing, Transpower shall appoint a Landowner Liaison Officer, who will:
 - (a) be responsible for maintaining contact with landowners and occupiers of each property prior to, and during construction; and
 - (b) have a contact role with the landowner during the development of the Site Works Plan (SWP) for individual properties.
42. Transpower shall make copies of individual SWPs available to the Waikato District Council for information purposes, upon request.

Construction Management Plan (CMP)

43. Prior to commencement of any construction activity authorised by the designation, Transpower shall submit a construction management plan to the Council's Consents Officer for approval. The Council's Consents Officer shall respond within 20 working days. Approval shall not be unreasonably withheld. The construction management plan shall outline Transpower's intended approach to:
 - (a) land stability management and sediment controls;
 - (b) storage and reuse of topsoil;
 - (c) management and disposal of spoil;

- (d) groundwater and stormwater management, treatment and disposal;
- (e) silt and dust control, during earthwork stages;
- (f) traffic/access management;
- (g) temporary activities and equipment storage in specified areas;
- (h) security and lighting during construction;
- (i) contaminated land management procedures;
- (j) construction noise (as set out in conditions 44–47), dust and vibration;
- (k) hours of work;
- (l) existing network utilities' protocols and guidelines;
- (m) subject to other specific conditions, cultural protocols and archaeological requirements;
- (n) vegetation clearance, disposal and restoration;
- (o) the intended construction programme (including staging if appropriate);
- (p) protocols and procedures for road controlling authorities and rail operators, where the line crosses that infrastructure;
- (q) community information and liaison;
- (r) contractor training; and
- (s) generic contents of Site Works Plans (SWPs).

Nothing in this condition allows the Council, or any other party, to require more onerous controls than contained in the designation conditions.

Construction and maintenance noise

- 44.** All construction and maintenance work shall be designed, managed and conducted to ensure that construction and maintenance noise from the designated area does not exceed the limits in NZS6803:1999 *Acoustics–Construction Noise* at locations set out in section 6.2 of that standard.

- 45.** The noise limits required by condition 44 shall not apply to emergency work required to re-establish continuity of supply, urgently required to prevent loss of life or other personal injury or commissioning works, but all practicable steps shall be undertaken to control noise and to avoid adverse noise effects particularly at times when the stricter noise limits apply (eg, at night time).
- 46.** Prior to any significant construction work taking place, including any earthworks, a noise management plan applicable to the construction and commissioning stages shall be prepared for the whole of the line, with the assistance of a suitably qualified and experienced person. The plan shall set out the management procedures in terms of section 8 and Annex E of NZS6803:1999 and the works shall be undertaken in accordance with that noise management plan.
- 47.** The noise management plan required by condition 46 shall be submitted to the Council's Consents Manager, at least 20 working days prior to the works commencing.

Vibration

- 48.** Vibration from all construction activities shall not exceed the limits of, and shall be measured in accordance with, German Standard DIN 4150-3 (1999-02) *Structural Vibration – Effects of Vibration on Structures*.

Aviation

- 49.** Transpower shall, on a monthly basis during the construction of the line, inform the New Zealand Agricultural Aviation Authority, the Civil Aviation Authority and Ardmore Airport Limited (in relation to the towers within the conical surface only, as set out in the Appendix Map 8, *Ardmore Aerodrome Protection Measures, Manukau Operative District Plan, 2002*) of the construction activities completed in the previous month, and intended to be undertaken in the following month including:
- (a)** erection of specific towers (with locations and heights); and
 - (b)** stringing of conductor and earthwires between specified towers.

For the avoidance of doubt, the requirement in condition 49 applies to each tower and conductoring of each tower, not merely the commencement of tower erection or conductoring.

Traffic Management Plan (TMP) for road crossings and local roads

- 50.** Transpower shall prepare a series of traffic management plans for road crossings and local roads used by heavy traffic in accordance with Transit New Zealand's *Code of Practice for Temporary Traffic Management* (COPTTM), after consultation with (as relevant):
- (a)** Waikato District Council (Road Controlling Authority);
 - (b)** New Zealand Transport Agency (NZTA); and
 - (c)** the following key stakeholders:
 - (i)** emergency services (including police);
 - (ii)** bus operators;
 - (iii)** schools;
 - (iv)** Housing New Zealand Corporation;
 - (d)** any additional key stakeholders identified by Waikato District Council.
- 51.** A TMP shall be submitted to the Council and NZTA (where relevant) at least 20 working days prior to the commencement of construction of the relevant road crossing works, or works affecting local roads. The plans may be submitted in stages, with each stage being submitted at least 20 working days prior to the commencement of the work the subject of that stage.
- 52.** The TMP prepared by Transpower shall recognise that the paramount purpose of roads is the free passage of the public and its vehicles.
- 53.** The TMPs shall address and provide details of proposed road crossing works and general use of local roads by heavy vehicles and/or mitigation measures relating to:
- (a)** the broad staging of the works, areas of activity and the nature and extent of traffic management;
 - (b)** locations of entranceways;
 - (c)** descriptions of existing traffic;
 - (d)** proposed traffic management methods, including layout diagrams for temporary traffic management, and proposed speed restrictions;

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- (e) in relation to road crossing works, details of the installation of any protection measures including, but not limited to, hurdles for subsequent line construction purposes;
 - (f) details of any necessary temporary road closures, diversions, or deviations which are likely to be required during road crossing activities, including the likely date, time, and duration of such matters (any necessary temporary road closures should be effected during off-peak periods unless this is impracticable or would have adverse impacts on adjacent properties);
 - (g) where diversions or deviations are required, information shall be provided by a suitably qualified and experienced traffic engineer of the traffic volumes and capacities of alternative routes, to ensure that such routes are both convenient and capable of safely accommodating any such diverted or deviated traffic;
 - (h) details of the proposed signage to advise motorists, residents, stakeholders, and other road users of any road closures, diversions and delays, such signage to be sufficiently clear to be capable of ready understanding by the general public and installed at appropriate locations at least seven days in advance of such road closures, diversions and delays;
 - (i) details of methods of proposed information dissemination regarding construction activities and associated traffic effects, including but not limited to public notices in newspapers, radio announcements, information packages and direct contact with affected persons. (Such information dissemination, and the chosen method of dissemination is to be proportional to the impact);
 - (j) Details of prior consultation or community liaison undertaken with affected residents, stakeholders, public transport providers, emergency services or representative groups regarding proposed road closures, diversions and delays, and any measures agreed with such groups to address any adverse effects or inconvenience that may arise; and

- (k) identification of any measures for the purposes of mitigating adverse traffic effects of construction traffic, including safety matters (such speed restrictions and signage), relating to cyclists, pedestrians, disabled persons, and schoolchildren.

Advice note:

1. *If temporary road closure is required, additional time may be necessary to allow the Road Controlling Authority to complete the consultation and give the public notices required under section 342 and schedule 10 of the Local Government Act 1974.*

Construction entranceways off public roads

54. Prior to the commencement of construction, Transpower shall undertake a survey of the condition of the roads in the immediate vicinity of construction entranceways off public roads (consisting of a photographic survey).
55. Transpower shall repair any damage to entranceways and public roads in the vicinity of those entranceways resulting from impacts of its construction traffic.

General advice note

1. *In relation to the ARI-PAK A towers outside the designated area, Transpower shall use its best endeavours to establish and follow the procedures in the conditions in relation to cultural/spiritual matters, construction noise, the preparation of the construction management plan and pre-construction activities.*