

UNDERGROUND CABLE ROUTE COMMON CONDITIONS

Cultural/Spiritual

1. If any urupa, traditional sites, taonga (significant artefacts), koiwi (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 tangata whenua, the New Zealand Historic Places Trust, the Manukau City 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 recover archaeological features discovered before work may recommence on the exposed site.

Magnetic Fields (MF)

2. The works shall be designed and constructed to limit the magnetic field exposure to the *International Committee on Non-Ionising Radiation Protection Guidelines for limiting exposure to time varying magnetic fields (up to 300 GHz) (Health Physics, 1998, 74(4): 494-522) (ICNIRP Guidelines)* public reference levels of 100µT for magnetic flux density when measured at 1 metre above ground level directly above any cable.

Radio frequency interference

3. All works shall be designed to comply with NZS 6869:2004 Limits and Measurement Methods of Electromagnetic Noise from High Voltage a.c. power systems, 0.15 to 1000 MHz.

Vibration

4. All construction activities shall comply with German Standard DIN 4150 "structural vibration".

Earth potential rise/induced voltages

5. The works shall be designed and constructed to comply with regulations 58, 60, 69 and 87 of the Electricity Regulations 1997 as in force as at the date of confirmation of the designation.
6. The works shall be designed and constructed so as not to cause existing assets of other utilities to be non-compliant with AS/NZS 4852:2000 "Electrical Hazard on Metallic Pipelines".

Remediation of property, roads and footpaths

7. Other than as provided in conditions 8 and 9, Transpower shall:
 - (a) within 10 working days of completion of construction on any land, reinstate any private or public land and property (excluding works in road reserves) as far as practicable to its pre-existing state. Such remediation shall include fences, gardens (excluding trees and grass) and other surface equipment or materials;
 - (b) as soon as practicable after the completion of construction re-grass areas that were previously grassed.
8. Prior to commencing construction, Transpower shall undertake a carriageway condition survey of the road network along the designated route, and shall invite appropriate representatives of Manukau City Council to attend. The condition

survey shall consist of a photographic or video record of the carriageway along the designated route.

9. As soon as practical following completion of construction, Transpower shall repair any damage to public carriageways and footpaths (and associated road components) resulting from the impacts of construction. Such repair may involve short-term maintenance to allow for settling and consolidation of carriageways prior to final repair.

Continuation of Access

10. Transpower shall at all times ensure that access to any property temporarily severed by construction is maintained at a level that will enable, as far as practicable, normal operations on the property to continue.

Traffic / Roading

11. Transpower shall prepare a Traffic Management Plan (**TMP**) which is generally consistent with Transit New Zealand's Code of Practice for Temporary Traffic Management (**COPTTM**).
12. The TMP shall be submitted to Manukau City Council's Consents Manager for approval at least 20 working days prior to commencement of underground cable construction after consultation with:
 - (a) Manukau City Council;
 - (b) The following key stakeholders:
 - (i) Emergency services (including police);
 - (ii) Bus operators;
 - (iii) Schools;
 - (iv) Housing New Zealand Corporation;
 - (c) Any additional key stakeholders identified by Manukau City Council.
13. The Council shall respond within 15 working days indicating whether approval is given or refused. Approval shall not be unreasonably withheld.

14. The TMP prepared by Transpower shall address and provide details of proposed works and/or mitigation measures relating to the following matters:

- (a) The likely routes for heavy construction related traffic;
- (b) Details of any necessary road closures, diversions, or deviations which are likely to be required during construction activities, including the likely date, time and duration of such actions. As far as practicable, any necessary temporary road closures should be effected during off peak periods;
- (c) Where diversions or deviations are required, information and recommendations shall be provided by a suitably qualified and experienced traffic engineer of the traffic volumes and capacities of alternative routes and the likely consequent effects in terms of safety and convenience. The traffic engineer shall ensure that recommended alternative routes are reasonably convenient and capable of safely accommodating diverted or deviated traffic. Transpower shall act on the recommendations of the traffic engineer in relation to alternative routes. Where traffic modelling related to specific intersections is required, the results of the modelling shall be included (see Special Conditions for individual routes);
- (d) Details of the signage intended to advise motorists, residents, stakeholders, and other road users of any road closures, diversions and delays, including examples of signage for diversion routes. Such signage shall be sufficiently clear to enable easy understanding by the general public, and installed at appropriate locations at least 7 days in advance of such road closures, diversions and delays. Such signage shall include the use of trailer-mounted electronic signs near the most affected roads;
- (e) Details of methods of proposed information dissemination regarding construction activities and associated traffic effects. These details shall include information regarding likely timing and duration of works, alternative routes, access to properties, and any alterations to public transport services. Methods of information dissemination shall include, but not be limited to, public notices in newspapers, radio

announcements, signage, information packages, and direct contact with affected properties along those routes;

- (f) Inclusion of a Communications Plan setting out the method of consultation and liaison with key stakeholders and affected parties regarding likely timing and duration of works, alternative routes, access to properties and any alterations to public transport services;
- (g) Details of prior consultation or community liaison undertaken with affected residents, key stakeholders, schools, 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;
- (h) Details of any measures for the purposes of mitigating adverse traffic effects of construction traffic, including safety matters, relating to cyclists, pedestrians, mobility impaired persons, and school children;
- (i) Where the cable is proposed to be installed across major intersections and/or arterial roads carrying higher traffic volumes (such as Ti Rakau Drive, Te Irirangi Drive, Chapel Road, Springs Road, East Tamaki Road), 3 months prior to the commencement of construction an assessment shall be carried out by a suitably qualified and experienced traffic engineer of:
 - (i) the traffic volumes using such intersections or roads;
 - (ii) the likely levels of delays and disruptions which may be experienced as a result of cable construction; and
 - (iii) identification of locations where such installation works must be carried out in the most timely manner practicable (including where reasonably practicable, the use of alternative methods of installation other than trenching), so as to minimise delays or inconvenience to road users;
- (j) Following consultation with public transport providers, details of proposed alternative temporary changes to public transport services during the construction period including but not limited to, any route

diversions, timetable adjustments, temporary bus stops, and methods of communicating such matters to public transport users.

Advice note: *the traffic management plan required by conditions [2 immediately above] can be incorporated into, and be part of the construction management plan required by condition [x below].*

Parking

15. Following consultation with residents, businesses and other directly affected persons, Transpower shall ensure that adequate temporary alternative carparking is provided for residents, businesses and other directly affected persons along or adjacent to the cable route, in the event that construction activity prevents or hinders usual parking. Such arrangements are to be made and advised to affected parties at least 5 working days prior to the commencement of the work that causes the effect.

Construction and Maintenance Noise

16. Subject to condition [immediately below], all construction and maintenance work shall be designed, managed and conducted to ensure that construction and maintenance noise along the underground cable route does not exceed the limits in NZS6803:1999 Acoustics – Construction Noise at locations set out in Section 6.2 of that Standard.
17. The noise limits shall not apply to emergency work required to re-establish continuity of electricity, communications or water supply, work 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 (e.g. at night time).
18. Prior to any significant construction work taking place, a noise management plan shall be prepared, with the assistance of a suitably qualified and experienced person, that sets 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 (other than emergency works).

19. The noise management plan required by condition **[immediately above]** shall be submitted to Manukau City Council's Consents Manager for approval, at least 20 working days prior to the works commencing. The Council's Consents Manager shall respond within 15 working days indicating whether approval is given or refused. Approval shall not be unreasonably withheld.

Advice note: the noise management plan required by condition [2 above] can be incorporated into, and be part of the construction management plan required by condition [below].

Construction Hours

20. Construction hours shall be as follows:

Monday to Friday: 7am to 6pm

Saturday: 8am to 1pm

Sundays and public holidays: No Work

except where work is necessary outside the specified days or hours for the following purposes:

- (a) where work is required to be planned to be carried out at low traffic times, for example, excavation across busy roads, or cable installation;
- (b) delivery of large equipment;
- (c) emergencies;
- (d) securing of the site or removing a traffic hazard;
- (e) cable jointing in self contained enclosures ;
- (f) where the distance between the work and the nearest residence is 100m or more and all other conditions are met.

Existing Utilities

[to come]

Construction Management Plan

21. At least 30 working days prior to commencing any construction activity along the designated underground cable route, Transpower shall submit a Construction Management Plan (**CMP**) to Manukau City Council for approval. The Council's Consents Manager shall respond within 15 working days indicating whether approval is given or refused. Approval shall not be unreasonably withheld. The construction management plan shall outline Transpower's intended approach to the following:

- (a) The proposed construction methodology;
- (b) Storage and reuse of top soil, including stockpiling areas;
- (c) On and off site disposal of spoil;
- (d) Silt and dust control, during earthwork stages;
- (e) Groundwater and stormwater management, treatment and disposal;
- (f) Traffic/property access management;
- (g) Contaminated land management procedures;
- (h) Construction hours;
- (i) Existing network utilities protocols and guidelines;
- (j) Access and utilities management;
- (k) Subject to other specific conditions, cultural protocols and archaeological requirements;
- (l) Land stability management and water quality and sediment controls;
- (m) Vegetation disturbance/removal and replacement;

- (n) Management of construction activities;
- (o) Contractor training, including health and safety;
- (p) The intended construction programme, including staging if appropriate;
- (q) Management of construction noise;
- (r) Community information and liaison;
- (s) Temporary activities and equipment storage in specified areas;
- (t) Contractor car parking in specified areas; and
- (u) Security and lighting during construction.

22. In preparing the CMP in accordance with condition **[immediately above]** the following minimum requirements shall be met:

- (a) quality soil shall be reused, where appropriate, and suitable stockpiling areas shall be identified;
- (b) spoil which is not reused in construction shall be disposed of at appropriate facilities;
- (c) dust on site shall be minimised to ensure that there is no dust nuisance off-site as a result of the works. Such minimisation could include spraying with water or covering of areas;
- (d) clean stormwater shall be directed away from bare or earthworked areas and sediment laden runoff shall be properly controlled and managed to minimise any discharge of sediments into watercourses;
- (e) as far as practicable, disturbance to riparian areas and stream banks and beds shall be minimised during construction;
- (f) measures for testing and removing any contaminated land along the route shall be developed;

- (g) liaison with existing utility providers with underground services within the designated route shall be undertaken;
- (h) adequate measures shall be implemented so as to avoid land slope failure;
- (i) when construction is taking place within the dripline of any tree over two metres in height to be retained on a public road or other public or private land, a qualified arborist shall be engaged to advise on the best method of root pruning and for continuing long-term avoidance of root interference with the cable;
- (j) site contractors shall have available at all working times, at an accessible place along the cable route, copies of all designation and consent conditions, the approved Construction Management Plan and the Draft Protocols entitled "*Transpower Grid Upgrade Project Protocol for Dealing with Koiwi or Taonga Unearthed During Construction and the Discovery of Sites of Significance, Wahi Tapu, Heritage Sites and Archaeological Sites*" (or updated document). Transpower shall ensure that the contractors understand the designation conditions and consent conditions;
- (k) Transpower shall notify Manukau City Council and Auckland Regional Council in writing at least ten working days before commencing works (including a separate notification for works commencing in Turanga Creek, Mangemangeroa Stream and Otara Creek), and shall notify the Councils that works have been completed within ten working days following completion of the works;
- (l) parties adjacent to the route shall be notified prior to commencement of works and shall be regularly updated ;
- (m) temporary activities, such as equipment storage shall be undertaken in suitably located areas (ie not within 20 metres of a watercourse);
- (n) contractor car parking shall be suitably located, so as to not prevent property access; and

- (o) work sites shall be secure and illuminated to restrict access as appropriate.

Advice note: Where the CMP requires Transpower to give notice to the Council, that notice can be given progressively, as stages of the work are complete.

**APPENDIX E: PAKURANGA TO BROWNHILL UNDERGROUND CABLE ROUTE
SPECIFIC CONDITIONS**

DESCRIPTION OF WORKS

- A. The designation applies to land comprised in the following computer freehold registers, and/or shown in the following plans: **[updated CFRS and plan references (in event no CFR) to follow]**
- B. The designation is for the construction, operation and maintenance of a double-circuit underground 220kV cable as part of the proposed North Island Grid Upgrade Project, to convey electricity between the Pakuranga Substation and the substation site at Brownhill Road and ancillary activities.

LAPSE

- C. The designation shall not lapse for a period of 15 years after incorporation in the District Plan.

CONDITIONS

Documents

1. The initial works to give effect to the designation of the Pakuranga to Brownhill underground cable shall be generally in accordance with the following plans:

Brownhill to Pakuranga Parcel Ownership Maps 1-4, 4 June 2008.

2. This condition shall not limit any future activities within the designated area provided that they are within the scope of the designation as set out in A and B above and comply with the following conditions of this designation.

Traffic / Roading

[In addition to common traffic conditions the following additional condition is to be imposed.]

3. Transpower shall carry out traffic modelling at the intersections of Chapel Road/Maghera Drive/Armoy Drive and Haven Drive, and the crossings of Te Irirangi and Ti Rakau to assess the impact of the construction works on intersection capacity prior to completing the Construction Management Plan (**CMP**) and the Traffic Management Plan as required by conditions **XX**, and incorporate any necessary specific provisions in the CMP.

Sandstone / Caldwell's Road Intersection sight line protection

4. Transpower shall construct and install the cable in the vicinity of the Sandstone / Caldwell's Road intersection in general accordance with the plan entitled "*Sandstone Rd – Caldwell's Rd Cable Route Intersection*", Drg No. 60019119-SK01, Rev 0 in order to maintain the sight lines for any intersection installed in accordance with the plan entitled "*North Island Grid Upgrade Project, Brownhill to Pakuranga Cable Route, Sandstone Road – Caldwell's Road Intersection, Sheet 3 of 4 (contour)*," Feb 2008, Drg No. 60019119-R 933, Rev A.

Brownhill Road upgrade

5. After installation of the cables, Transpower shall after consultation with Manukau City Council upgrade Brownhill Road to the entrance to the substation site to meet Manukau City Council's minimum design standards for rural roads as defined in their Engineering Quality Standard R16 – Rural Roading "Minimum Standard".

Archaeology: Known Archaeological Sites R11/2380, R11/2381 and R11/2382

6. Before initial construction works are carried out, Transpower shall undertake the following:
 - (a) as far as practicable, devise construction methodologies to minimise the amount of damage to site R11/2380;
 - (b) those parts of site R11/2380 that will be damaged during construction shall (subject to all necessary statutory consents) be subject to a preliminary archaeological investigation and recording by a suitably

qualified and experienced archaeologist (**project archaeologist**) *prior to* the main works proceeding through this area;

- (c) all earthworks within 30 metres either side of site R11/2380 along Caldwell's Road shall be monitored by the project archaeologist when they occur;
- (d) all works in the stormwater management area south east and adjacent to the Pakuranga Substation where significant earthworks have not occurred in the past, involving the stripping of topsoil shall be monitored by an archaeologist.

Advice Note: This condition is subject to any conditions of any archaeological authority granted under the Historic Places Act 1993.

APPENDIX F: BROWNHILL TO OTAHUHU UNDERGROUND CABLE ROUTE SPECIAL CONDITIONS
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DESCRIPTION OF WORKS

- A. The designation applies to the land comprised in the following computer freehold registers and/or shown in the following plans: **[updated CFRs to follow, or plans in event no CFRs]**
- B. The designation is for the construction, operation and maintenance of a double-circuit underground 220kV cable as part of the proposed North Island Grid Upgrade Project, to convey electricity between the Otahuhu Substation and the substation site at Brownhill Road, and ancillary activities.

LAPSE

- C. The designation shall not lapse for a period of 15 years after incorporation in the District Plan.

CONDITIONS

Documents

1. The initial works to give effect to the designation of the Brownhill to Otahuhu underground cable shall be generally in accordance with the following plans:

Brownhill to Otahuhu Parcel Ownership Maps 1-4, 4 June 2008.

This condition shall not limit any future activities within the designated area provided that they are within the scope of the designation as set out in B above and comply with the following conditions of this designation.

Traffic / Roading

[insert common conditions regarding traffic]

2. Following consultation with the Boards and/or principals of Sir Edmund Hillary College and Sancta Maria College (and any schools subsequently established with accesses and/or egresses adjacent to the underground cable route) Transpower shall ensure, as far as practicable, that works avoid school terms so as to minimise disruption to normal school activities. Details of relevant periods shall be included in the TMP.
3. Following consultation with the New Zealand Fire Service, details shall be provided in the TMP of proposed alternative access to and egress from the fire station located at 341 East Tamaki Road.
4. Transpower shall carry out traffic modelling at the intersections of Johnstones Road/Springs Road/East Tamaki Road and Chapel Road/Accent Drive/Stancombe Road to assess the impact of the construction works on intersection capacity prior to completing the Construction Management Plan (**CMP**) and the Traffic Management Plan as required by condition **XX**, and incorporate any necessary specific provisions in the CMP.

Future Roding

5. Cable installed in the vicinity of:
 - (a) the Redoubt Road extension between Regis Lane and Ormiston Road (as shown on maps 49-50, Manukau City Council Operative District Plan 2002); and
 - (b) the possible future road connection between the Scenic Drive and Brownhill Road (as shown on the Wood and Partners plan entitled "*Kent Subdivision, Drainage & Water Supply Plan – 2, Manukau City Council*", issued 07/08/06);

shall be buried to a depth that does not prevent construction of those roads due to the presence of the cables, in the locations shown on those plans, in the future.

Archaeology: Unknown Sites in the vicinity of Otara Creek

6. Any earthworks associated with the North Island Grid Upgrade Project 20 metres either side of the Otara Creek crossing shall be monitored by a suitably qualified and experienced archaeologist (**project archaeologist**).

Advice note: This condition is subject to any conditions of any archaeological authority granted under the Historic Places Act 1993.

Archaeology: Known Sites R11/2333 and R11/2384

7. Before any works are carried out associated with the North Island Grid Upgrade Project, Transpower shall undertake the following:

- (a) make any minor adjustments to the location of the cable trench within the corridor to ensure that the sites R11/2333 and R11/2384 are not damaged by construction of the cable trench;
- (b) all works involving the stripping of topsoil at 383 and 359 East Tamaki Road, and undeveloped neighbouring properties shown on plan entitled "*Undeveloped Properties in the vicinity of 383 East Tamaki Road*", 3 June 2008, and referenced as 5086497 Lot 26 DP 615, 6637360 Lot 28 DP 317068, 6576300 Sec 3 SO 70224, that are crossed by the cable alignment, including the stormwater management area, shall be monitored by the project archaeologist.

Advice note: This condition is subject to any conditions of any archaeological authority granted under the Historic Places Act 1993.