

OTA-WKM A & B Underground National Grid Transmission Line Notice of Requirement: Assessment of Environmental Effects Report

Underground OTA-WKM A & B Transmission Lines through
the Flat Bush Sub-Precinct C

Transpower New Zealand Ltd

10 September 2019


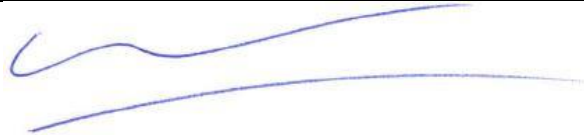

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The report has been prepared by Incite for the Transpower, according to their instructions, to support a Notice of Requirement application under the Resource Management Act 1991. This report has been prepared on the basis of information provided by Transpower and other technical specialists. Incite has not independently verified the provided information and has relied upon it being accurate and sufficient for use by Incite in preparing the report. Incite accepts no responsibility for errors or omissions in the provided information.

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Glossary of Terms and Acronyms Used in this Document

Term/Acronym	Meaning/Full Notation
AEE	Assessment of Environmental Effects
AUP	Auckland Unitary Plan – Operative in Part
CTS	Cable Termination Structures
NESCS	Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011
NESETA	Resource Management (National Environmental Standard for Electricity Transmission Activities) Regulations 2009
OTA-WKM A	Otahuhu-Whakamaru A 220kV transmission line
OTA-WKM B	Otahuhu-Whakamaru B 220kV transmission line
OTA-WKM C	Otahuhu-Whakamaru C 220kV transmission line
RMA	Resource Management Act 1991
SEA	Significant Ecological Area

1. Introduction

1.1 Purpose of this Assessment of Environmental Effects Report

The following document and attachments support a Notice of Requirement ('NoR') by Transpower New Zealand Limited ('Transpower' or 'the Requiring Authority') made under s168 of the Resource Management Act 1991 ('the RMA') to designate land for the purposes of a protective designation. The protective designation is for the underground sections of the Otahuhu-Whakamaru A & B 220kV transmission lines (OTA-WKM A & B) and the associated cable termination structures, that are currently being constructed within the sub-precinct C of the Flat Bush Special Housing Area.

Resource consents to enable these works were granted to Transpower by Auckland Council on 5 July 2018 (reference LUC60320180), and work is well underway to implement the consents. At the same time this area is being progressively subdivided and developed for housing by Greeton Holdings Limited¹ (Greeton Holdings), Murphys Park Development LP (Murphys Park), Vista Estate LP (Vista Estate) and Green City Developments Limited (Green City) - jointly referred to as 'the Developers'.

In general terms, the purpose of the designation is to enable Transpower to maintain a protective designation over the OTA-WKM A & B transmission lines that are to be undergrounded within the sub-precinct C of the Flat Bush Special Housing Area, as well as the cable termination structures (CTSs) at either end of the underground sections.

1.2 Transpower as a Requiring Authority

Transpower was approved as a requiring authority by the Minister for the Environment on 19 May 1994 (Notice Number 1994-go3533). This authority applies to Transpower's network operation for the supply of "*line function services*" pursuant to Section 167 of the RMA. The term 'line function services' has the same meaning as in section 2(1) of the Electricity Act 1992 namely:

- a) *The provision and maintenance of works for the conveyance of electricity;*
- b) *The operation of such works, including the control of voltage and the assumption of responsibility for losses of electricity.*

Transpower therefore has approval as a requiring authority for the purpose of this NoR.

1.3 Project Background

Transpower is the State-Owned Enterprise that plans, builds, maintains and operates New Zealand's high voltage electricity transmission network – the National Grid. The National Grid is comprised of approximately 12,000 km of transmission lines and cables and 167 substations. It links generators to distribution companies and major industrial users from Kaikohe in the North Island to Tiwai in the South Island. This role is recognised in the National Policy Statement on Electricity Transmission, which identifies the need to operate, maintain, develop and upgrade the electricity transmission network as a “*Matter of national significance*”. As such Transpower plays a fundamental part in New Zealand's economy.

The Developers have engaged Transpower to underground parts of the Otahuhu-Whakamaru A & B overhead transmission lines (OTA-WKM A & B), which currently run overhead through the Flat Bush sub-precinct C. This will enable the Developers to achieve a greater residential yield and enhanced subdivision design and residential layout than would otherwise occur if the lines remained overhead.

The OTA-WKM A & B lines are 220kV transmission lines, each with a single circuit (three overhead conductors) on lattice steel towers, that run between the Otahuhu Substation in Auckland and the Whakamaru Substation². The OTA-WKM A & B lines run in a general east-west direction through sub-precinct C of the Flat Bush Special Housing Area.

2. Site Description

2.1 Site and Surrounds

The proposed underground route traverses areas of land in several titles as listed below. The location of the properties is shown in Figure 1 below.

- 36 Tir Conaill Avenue – Lot 500 DP 526958 – Greerton Holdings Limited
- 125 Murphys Road – Lot 2 DP 515396 - Green City Developments Limited³
- 23 Murphys Park Drive – Lot 200 DP 520585 – Murphys Park Development LP
- 125B Murphys Road – Lot 2 DP 470922 – Vista Estate LP

All of the above properties are part of the Flat Bush sub-precinct C development area. Copies of the certificates of titles are attached as Appendix B.

² The OTA-WKM C line also traverses the Flat Bush sub-precinct C (to the south of the A & B lines), however, this line is not being undergrounded.

³ It is noted that there has been a recent subdivision of the 125 Murphys Road property, however, the land is still owned by Green City Developments Limited.

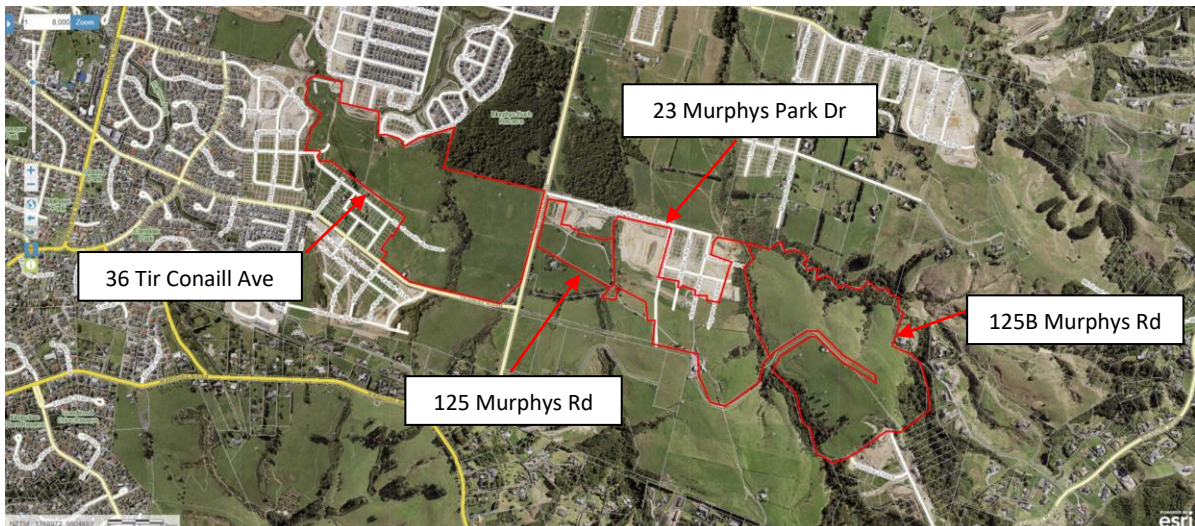


Figure 1: Location of the site (outlined in red) and surrounds, sourced from Transpower AssetMap.

The proposed cable routes will also cross Murphys Road (formed) and Hodges Road (not yet formed) which are legal roads, as well as being located within the future road network (not yet legalised) associated with the various subdivisions being undertaken. All of these roads are either currently owned, or will become owned, by Auckland Council (managed by Auckland Transport). Murphys Road accommodates underground utilities including a Watercare water main, Nova and Vector gas mains, and telecommunications lines owned by Chorus and Vodafone. The overhead utilities in Murphys Road include Vector electricity distribution lines.

The site is actively being developed as part of the ongoing Flat Bush sub-precinct C residential development (refer Figure 2 below for the indicative residential layout). Currently bulk earthworks are occurring on various portions of the site to form finished road and lot levels.

The site also features three watercourses with various levels of riparian vegetation running from north to south. The site at 84 Thomas Road features an identified Significant Ecological Area (SEA) within the Auckland Unitary Plan – Operative in Part (reference SEA_T_1191).

The area to the west and north of the subject site includes land already established for suburban residential, or land progressively being developed for such. Land to the south and east includes Totara Park and Tuscan Estates, which consist of larger lot residential activities.

Murphy's Road is designated within the Auckland Unitary Plan – Operative in Part (reference 1836) for the Mill Road – Redoubt Road Corridor Project. This is understood to involve road widening works.

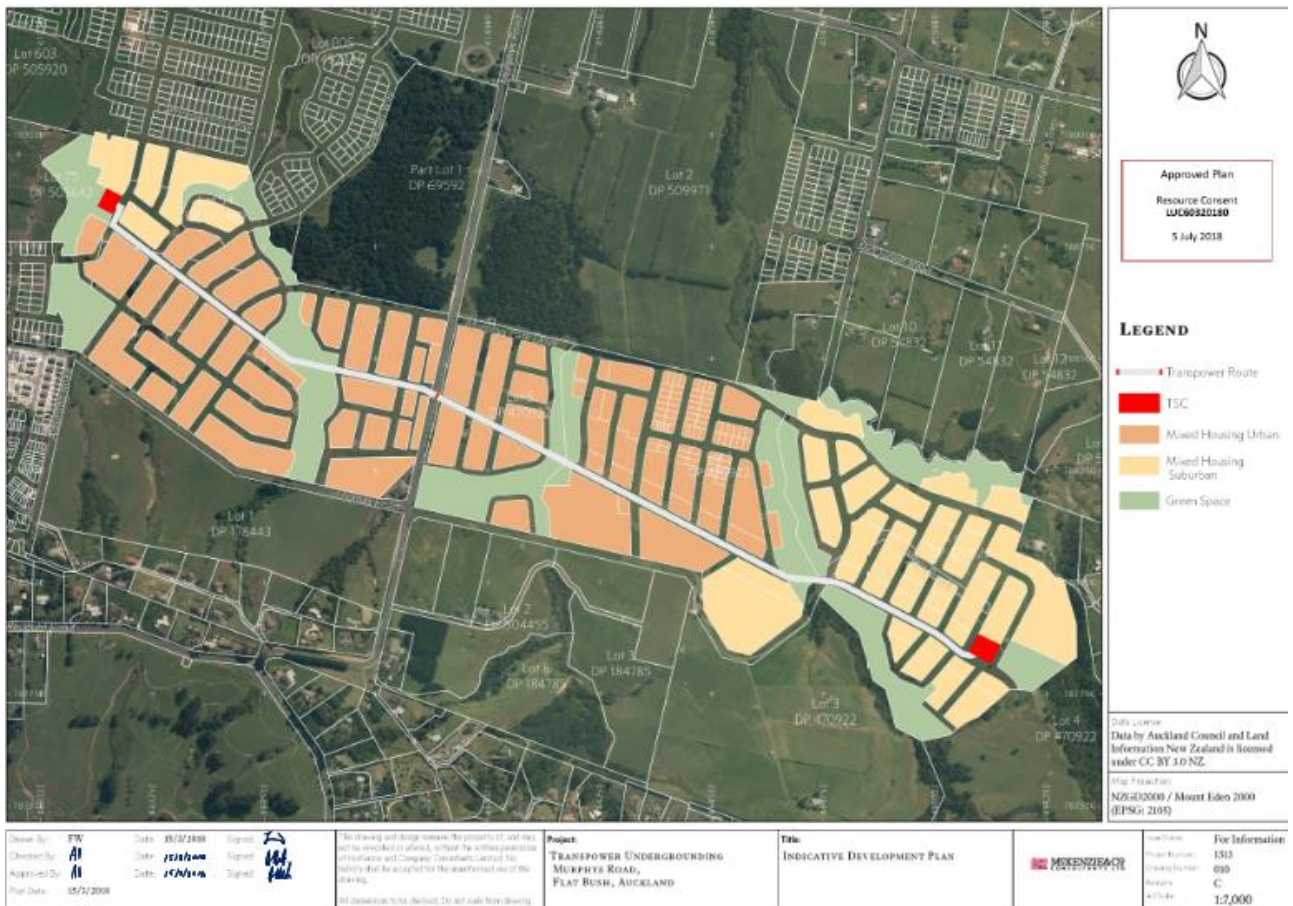


Figure 2: Indicative Residential Development Plan – Rev C, sourced from McKenzie and Co

2.2 Existing Resource Consents /Current Works

Transpower New Zealand Limited

Transpower has obtained resource consents for the enabling works associated with undergrounding sections of the OTA-WKM A & B transmission lines, and the associated CTSs, that are currently being constructed within the sub-precinct C of the Flat Bush Special Housing Area (referenced as LUC60320180). Consent was obtained under the Resource Management (National Environmental Standard for Electricity Transmission Activities) Regulations 2009 (NESETA), and the Auckland Council Unitary Plan – Operative in part (AUP) as described below.

District Consents

Undergrounding Existing Transmission Lines

The undergrounding of the OTA-WKM A & B transmission lines in compliance with the relevant NESETA regulations – controlled activity.

Replacement of Existing Transmission Line Support Structures

The relocation and replacement of existing Tower 490 on the OTA-WKM A line and Towers 470, 477 on the OTA-WKM B line that fall outside the envelope for controlled activities under the NESETA – restricted discretionary activity.

Other Transmission Activities

The installation and operation of the two CTSs that are not otherwise provided for as permitted, controlled or restricted discretionary under the NESETA – discretionary activity.

Regional Consents

Infrastructure

The undertaking of earthworks involving a volume of approximately 26m³ within the SEA overlay associated with the undergrounding of the OTA-WKM A & B transmission lines – restricted discretionary activity.

A copy of the decision for all the above resource consents (i.e. Ref LUC60320180) is included as Appendix C. These consents are currently being given effect to.

Pi-Pole 470A

Following grant of LUC60320180 for the above-mentioned works, a variation was applied for pursuant to s127 of the RMA to consent the replacement and relocation of Tower 470 on the OTA-WKM B line with a pi-pole structure as opposed to a lattice tower structure (referenced as LUC60320180-A). A copy of the decision for resource consent as LUC60320180-A is included as Appendix D.

Relevant Developer Consents

Resource consents have separately been obtained by the Developers to undertake bulk earthworks to create finished ground levels prior to subdivision. These consents include provision for the

earthworks required for trenching and the installation of ducting and joint bays required for the undergrounding of the OTA-WKM A & B lines and for the platforms and other earthworks for the CTSs and replacement tower structures at each end. The following summarises the consents obtained by the Developers in relation to bulk earthworks:

- LUC60306991 – Hugh Green Limited
 - 84 Thomas Road, 11 Drumconnell Drive, 80 Drumbuoy Drive
 - *To undertake bulk earthworks involving approximately 190,000m³ of cut and 194,000m³ of fill over a total area of 18.95ha to enable future development and prepare for the undergrounding of Transpower’s transmission lines A and B.*

- LUC60310354 – Green City Developments Limited
 - 125 Murphys Road, Flat Bush
 - *To undertake bulk earthworks to enable the future development of the site for residential and business purposes, including works to enable the future undergrounding of electricity transmission lines and the disturbance of potentially contaminated land.*

- LUC60310508 & LUS60318425 – Vista Estates LP
 - 125A & 125B Murphys Road, Flat Bush
 - *Resource consent for earthworks associated with the future undergrounding of Transpower National Grid Transmission Lines and installation of a culvert to support future road crossing and the undergrounded lines.*

Progress of the Transpower Works

The consented works are well underway. The cable trenches are now complete, and the joint bays have been installed. Horizontal drilling has been completed under the SEA and is currently in progress underneath Murphys Road. The CTSs and new tower and pi pole platforms are nearly completed, and the foundations for these have been installed. Images showing the cable trenches, ducting, CTSs and platforms for the new towers/pi-pole are attached as Appendix E.

3. Description of Proposal

3.1 Overview

Transpower is seeking a new designation within the Auckland Unitary Plan Operative in Part (AUP). The designation will encompass the land required to underground the OTA-WKM A & B lines through the sub-precinct C of the Flat Bush Special Housing Area. This will include the land required for the underground transmission lines and the two CTSs (i.e. one at each end) and associated ancillary works. The proposed designation is sought as a protective measure only and will not be an “enabling” designation (as the necessary resource consents to construct the work have already been obtained as outlined in Section 2 above). The designation will provide for the long-term protection of these Transpower assets.

3.2 Protective Designation

The land subject to the underground transmission lines and cable termination structures will be designated for the purpose of *“National Grid Underground 220kV Cables, Cable Termination Structures and Ancillary Works – Protection Only”*.

The cable route to be designated will predominantly be located within land that will be vested as legal road. The Land Requirement Plans, attached as Appendix A show the extent of the land to be designated and includes the legal descriptions of the parcels of land that are subject to the NoR. The route commences at the location of the western CTS (near to existing Towers 496 and 477), will go south-east prior to crossing the area identified as a SEA and will then continue to cross Murphys Road. The designation route will continue south-east to the eastern CTS and will cross two parcels to be vested as local purpose reserve.

The width of the designation when in land to be vested as legal road will be approximately 24m which will cover the entirety of the future road corridor. The designation will widen to 25m where it crosses land to vest as reserve, and to 24.6m where it crosses Murphys Road. The designation also includes the western and eastern CTSs, as well as an area around them. The purpose of the designation beyond the CTS compounds is to accommodate the area subject to Earth Potential Rise, and to provide a buffer area and space for landscaping.

The proposed designation of the full road reserve width is necessary to ensure the underground cables and the two CTSs are protected from:

- (i) Incompatible third-party activities that may inadvertently create electrical hazard or security of supply risks. Because the Transpower assets will be installed in a greenfields site in advance of other infrastructure (such as the overlying roading network and the underground utilities required to service the planned subdivision), there is a heightened risk that the cables could be damaged from land disturbance and other construction activities, when compared to the situation when cables are installed in an existing road carriageway.
- (ii) The developers undertake their work on a piece-meal basis, with no end to end plans which show the location of the various underground services required for the subdivision. It is anticipated that this uncertainty will continue long after Transpower has completed the undergrounding works. In the absence of these detailed plans, the protective designation provides the ability to engage with third parties at a later date, to mutually agree upon solutions that protect the underground cables.
- (iii) Mutual heating risks from other utilities such as wastewater pipes and distribution power cables. High voltage underground cables are sensitive to mutual heating and derating if placed too close to certain other infrastructure. Transpower is able to provide standard separation and clearance distances to address the risk of physical damage to its cables,

however, it is not possible to deal with other interdependencies in this way. For example, mutual heating can only be assessed by considering the technical/electrical parameters for a particular project and local ground conditions.

While Transpower currently has easements over the full proposed road corridor, once the roads are vested the easements fall away and the designation becomes crucial to protecting Transpower's assets, which are critical to Auckland's security of supply. The designation will also aid in mitigating these risks by clearly identifying these assets on the Planning Maps.

A condition on the designation has been volunteered which will enable the extent of the designation to be reviewed in the future following completion of the proposed works and certainty around the location of other infrastructure.

Where the designation passes over Murphys Road, it will also cross an existing Auckland Transport designation (reference 1836 – Mill Road – Redoubt Road Corridor Project). While this proposed designation will result in an "overlap" with the existing Auckland Transport designation over Murphys Road, Auckland Transport's designation will have primacy in this location while Transpower's will be secondary. Transpower's proposed designation will therefore not adversely affect the ability for Auckland Transport to carry out their works in accordance with their designation within Murphys Road.

The cable route is located outside land to be vested as local road in three key locations, namely at the SEA to the west of Murphys Road and across the two watercourses to the east of Murphys Road. All three of these locations consist of land to be vested as local purpose reserve following subdivision.

The assessment of effects has been undertaken on the basis of the footprint to be designated as shown in the Land Requirement Plans.

Overall, the land identified for designation is necessary to provide for the long-term protection and security of these Transpower assets.

Proposed Restrictions

Designation Purpose:

*National Grid Underground 220kV Cables, Cable Termination Structures and Ancillary Works
– Protection Only*

Designation Conditions:

- 1. As soon as practicable following completion of construction of the underground cables, the aboveground cable termination structures and ancillary works, the requiring authority shall provide as-built plans to the Council.*
- 2. The Requiring Authority will prior to the next district plan review:*
 - a. Review the width of the area designated for the project;*

- b. Identify any areas of designated land that are no longer necessary for the ongoing operation, maintenance, renewal and protection of the underground cables and ancillary activities; and*
- c. Remove the designation over any surplus areas identified in (b) above and provide a plan of the final designated areas to the Council for inclusion in the Auckland Unitary Plan.*

Advice Note

- 1. Where section 176 approvals are required by utility operators (other than the requiring authority) for works within the designation the requiring authority will provide a timely response, in order to facilitate co-ordination of section 176 approvals sought by the utility operator and the Corridor Access Request process.*

Explanation

The advice note is proposed to provide confirmation to network utility operators that section 176 approvals will be provided in a timely manner.

4. The Requiring Authority's Objectives

Transpower plans, builds, maintains and operates New Zealand's high voltage electricity transmission network – the National Grid – which links generators to distribution companies and major industrial users.

Transpower's objective for this project is to:

- Protect the ongoing operation and security of the underground section of the OTA-WKM A & B transmission lines and associated CTs and ancillary works within the Flat Bush sub-precinct C development, which is nationally significant infrastructure.

It is considered that the proposed protective designation, which will minimise the risk of third party activities adversely affecting nationally significant assets, is an appropriate mechanism for achieving this objective.

5. Statutory Assessment

The following provides a statutory assessment of the proposed protective designation in accordance with the RMA. The statutory documents assessed include the RMA, the National Policy Statement on Electricity Transmission (NPSET), the Auckland Unitary Plan, and the National Environmental Standard for Electricity Transmission Activities.

5.1 Resource Management Act 1991

The RMA provides for the use and development of New Zealand’s natural and physical resources through:

- Part 2, which establishes the purpose and principles applying to resource consents and designations;
- Sections 168, which enables a requiring authority to lodge a notice of requirement with the relevant territorial authority;
- Section 171, which prescribes matters to which particular regard must be had in considering a requirement for a designation.

The following sections of the RMA are most relevant to this notice.

Section 5 – Purpose

The purpose of the Act is to promote the sustainable management of natural and physical resources. Sustainable management is defined in section 5(2) as:

... managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while:

- (a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
- (b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
- (c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

The National Grid is a physical resource of national significance. The proposal is consistent with the purpose and principles of Part 2 of the RMA as it will enable people and communities to provide for their social, cultural and economic well-being by providing for the ongoing protection of the National Grid. The adverse environmental effects of the proposed protective designation are limited to effects on the activities of other parties. The adverse effects on the activities of other parties is assessed as less than minor as set out in section 6 of this document below.

Section 6 – Matters of National Importance

There are no matters of national importance listed in section 6 considered to be of direct relevance to this Notice of Requirement.

Section 7 – Other Matters

This section lists certain matters to which particular regard is to be had in making resource management decisions. The only matter considered relevant to this protective designation is:

- ...
- (b) The efficient use and development of natural and physical resources;*
- ...

In regard to s7(b), the National Grid is a physical resource of national significance. Designation of the underground cable route, cable termination structures and ancillary works will protect the transmission asset, and in doing so will provide for the ongoing operation and security of the National Grid.

Section 8 – Treaty of Waitangi

This section requires those exercising powers or functions under the Act to take into account the principles of the Treaty of Waitangi. No treaty issues have been identified that are specifically relevant to this proposal.

Section 168 – Notice of Requirement

Transpower is an approved requiring authority under s167 of the Act. The Notice of Requirement has been lodged with the relevant territorial authorities under section 168(2).

Section 171 – Recommendation by the Territorial Authority

Under section 171, the territorial authority may recommend to the requiring authority one of the following:

- confirm the designation
- modify the designation
- impose conditions
- withdraw the requirement

The matters to be considered are set out in section 171(1) of the Act and are as follows:

- (1) *When considering a requirement and any submissions received, the territorial authority must, subject to Part 2, consider the effects on the environment of allowing the requirement, having particular regard to—*
 - (a) *Any relevant provisions of—*
 - (i) *a national policy statement,*
 - (ii) *a New Zealand coastal policy statement,*
 - (iii) *a regional policy statement, or proposed regional policy statement; and*
 - (iv) *a plan or a proposed plan; and*
 - (b) *Whether adequate consideration has been given to alternative sites, routes, or methods of undertaking work if—*
 - (i) *the requiring authority does not have an interest in the land sufficient for undertaking the work; or*
 - (ii) *it is likely that the work will have significant adverse effect on the environment; and*
 - (c) *Whether the work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought; and*
 - (d) *Any other matter the territorial authority considers reasonably necessary in order to make a recommendation on the requirement.*

The proposal to designate land for an underground electricity transmission lines, associated CTSs and ancillary structures has taken into account the relevant provisions of the relevant statutory documents in sections 5.2 and 5.3 below.

As assessment of alternatives considered is summarised in section 8 below.

Designation is considered to be the most appropriate method for ongoing protection and security of the underground section of the OTA-WKM A & B transmission lines and associated CTSs and ancillary works within the parameters of the conditions proposed; particularly so in relation to protection of the equipment from third party activity. As discussed in section 5.2 below, Policy 13 of the National Policy Statement of Electricity Transmission (NPSET) requires decision makers to recognise that the designation process can facilitate long-term planning for the development, operation and maintenance of electricity transmission infrastructure.

The project and designation are considered reasonably necessary for meeting the objective of the Requiring Authority as outlined in section 4 above.

An assessment of the regional and district planning instruments as well as an assessment of environmental effects are included within this report and collectively deal with the matters that are considered reasonably necessary for the territorial authority to make a recommendation on the Notice of Requirement.

Section 176A – Outline Plan

As the Notice of Requirement is for a “protection only” designation rather than an enabling designation, no Outline Plans will be required in the future for any physical works to occur.

5.2 National Policy Statement on Electricity Transmission (NPSET)

The *National Policy Statement on Electricity Transmission* (NPSET) sets out objectives and policies to enable the management of the effects of and on the electricity transmission network under the RMA. Overall the proposal is consistent with the objectives and policies of the NPSET.

The objective of the NPSET is as follows:

To recognise the national significance of the electricity transmission network by facilitating the operation, maintenance and upgrade of the existing transmission network and the establishment of new transmission resources to meet the needs of present and future generations, while:

- *managing the adverse environmental effects of the network; and*
- *managing the adverse effects of other activities on the network.*

The proposal is consistent with this objective for the following reasons:

- The proposal will enable the ongoing operation and security of the electricity transmission network.

- The design of the consented works and designation conditions will ensure any adverse effects of the activity on the receiving environment are appropriately managed, while the designation corridor will also ensure that the activities of third parties around the transmission assets are appropriately managed.

Policy 1 of the NPSET “Recognition of the national benefits of transmission” is of relevance and is as follows:

In achieving the purpose of the Act, decision-makers must recognise and provide for the national, regional and local benefits of sustainable, secure and efficient electricity transmission. The benefits relevant to any particular project or development of the electricity transmission network may include:

- i). maintained or improved security of supply of electricity; or*
- ii). efficient transfer of energy through a reduction of transmission losses; or*
- iii). the facilitation of the use and development of new electricity generation, including renewable generation which assists in the management of the effects of climate change; or*
- iv). enhanced supply of electricity through the removal of points of congestion.*

The above list of benefits is not intended to be exhaustive and a particular policy, plan, project or development may have or recognise other benefits.

Policy 1(i) is relevant as the proposal maintains the security of the National Grid and ensures any effects resulting from any third-party activities will not adversely affect the designated assets.

Policies 2 to 9 of the NPSET are concerned with “Managing the environmental effects of transmission”. The definition of “Electricity transmission network, electricity transmission and transmission activities/assets/infrastructure/resources/system” in section 3 “Interpretation” of the NPSET refers to the physical components of the National Grid. The adverse environmental effects of construction of the physical works required have already been addressed in the existing resource consents i.e. the proposed designation will not enable construction of these works, only protection of the works when completed. As such, Policies 2 to 9 are not considered to be of relevance.

Policies 10 and 11 of the NPSET address management of the adverse effects of third parties on the transmission network. Policy 11 is not directly relevant as it relates to inclusion of buffer corridors in District Plans which relate to overhead lines. In regard to Policy 10, the designation corridor for the transmission lines will ensure the activities of third parties do not adversely affect the underground transmission lines and CTSs, and that the electricity transmission network is not compromised.

Policy 12 of the NPSET requires territorial authorities to identify the electricity transmission network on their relevant planning maps whether or not the network is designated. The existing overhead transmission lines are identified on planning maps in the AUP. Designating the new underground cable route and associated CTSs will clearly identify the location of these assets in the AUP.

Policy 13 of the NPSET requires decision makers to recognise that the designation process can facilitate long-term planning for the development, operation and maintenance of electricity transmission infrastructure. This is consistent with the approach taken by Transpower to designate the underground cables and cable termination structures.

5.3 Auckland Unitary Plan – Operative in Part

The *Auckland Unitary Plan – Operative in Part* (the AUP) sets out the region’s resource management strategy to control the effects of activities and development within the Auckland region. Overall the proposal is consistent with the relevant provisions of the AUP. An assessment against the relevant objectives and policies of the AUP is attached as Appendix F. The following provides a summary.

The Regional Policy Statement level objectives and policies relating to infrastructure are contained within Chapter B3 of the AUP. The relevant objectives and policies seek that the benefits of infrastructure are recognised, development of infrastructure is enabled and adverse effects are managed while noting the functional and operational needs of infrastructure. The objectives and policies also seek that infrastructure planning and land use planning are integrated to service growth efficiently and that infrastructure is protected from reverse sensitivity effects. Of particular relevance to this proposal is the explicit reference to the national significance of the National Grid and recognising and providing for its effective development, operation, maintenance and upgrading. The objectives also require that infrastructure is appropriately protected from incompatible subdivision, use and development, and reverse sensitivity effects.

The objectives and policies for infrastructure at the regional and district plan level are included in Chapter E26. The relevant objectives and policies generally seek to ensure the benefits of infrastructure are recognised; safe, efficient and secure infrastructure is enabled; and infrastructure is appropriately protected from incompatible subdivision, use and development, and reverse sensitivity effects. Of particular relevance to this proposal is the explicit reference to the national significance of the National Grid and recognising and providing for its effective development, operation, maintenance and upgrading.

The proposal is consistent with these objectives and policies for the following reasons:

- The proposed designation will provide for the efficient ongoing operation and security of the National Grid through adding a layer of protection through an RMA mechanism. As such, this will allow for the benefits provided by the National Grid to continue in a safe and efficient manner.
- The underground transmission lines and associated CTSs and ancillary works will be protected from incompatible subdivision, land use and development.
- The direct reference to the National Grid highlights the national significance of this network and the need to provide for effective operation and maintenance which will be achieved through the proposed designation.
- For the reasons stated in section 6 of the AEE, any adverse effects of the designation of the underground transmission lines and associated CTSs and ancillary works on the operation of other utilities have been minimised through the design and the location of the work as part

of the enabling consents. Further, Transpower has well established processes for providing written approvals under s176 of the RMA in a timely manner for new works undertaken by other utility operators within a designated area.

6. Assessment of Environmental Effects

6.1 Approach to Environment Effects Assessment

There are already resource consents in place for the undergrounding of the OTA-WKM A & B transmission lines, construction of the CTSs and associated works, which have been granted to Transpower. Transpower is now seeking a protective designation to encompass the route of the underground transmission lines, the two CTSs and ancillary works. The existing consented activities comprise part of the existing environment. Accordingly, the assessment of effects is focussed on the changes in environmental effects between those activities already consented, and any changes resulting from the proposed designation and associated conditions. Overall, the change in effects, relates to the actual or potential impact on the activities of other parties within the area to be designated, and has been assessed as less than minor for the reasons set out below.

6.2 Utilities

The effects of the underground transmission line on the activities of other network utilities have been minimised through the following:

- locating the majority of the cable route within a proposed road carriageway, rather than within the road berm where the majority of future network utility infrastructure (other than Council services) is intended to be located; and
- locating the cables generally at a depth between 1.5-3m below ground, to allow other utilities to be placed above them, subject to a s176 approval process to ensure such crossing are appropriately designed.

Works of other utility operators within the designated area that do not risk damage to the cables will be approved by Transpower under s176(1)(b). Provision of s176 approval for works within areas designated by Transpower is undertaken on a regular basis and Transpower has well established systems in place to deal with these requests. Further, in recognition of the need to provide a timely response to requests for s176 approvals by network utility operators, Transpower proposes an advice note that the s176 approval and CAR processes can be carried out simultaneously. All utilities working in the roadspace will need to make an application for a CAR in any event and s176 approval can be processed by Transpower in parallel where there are no conflicts between the utilities.

Whilst needing a s176 approval may in some instances be perceived to be less convenient for other network utility operators, this needs to be considered in the context of the nationally significant status of the National Grid, and the specific provision for this process under RMA. Approval will not

be unreasonably withheld for necessary network utility works including those within the future road corridors. In the unlikely event there is disagreement, a process for resolution is provided in s179 of the RMA.

A condition on the designation is volunteered that requires Transpower, prior to the next district plan review, to identify any areas of designated land that are no longer necessary for the on-going operation, maintenance, renewal and protection of the underground cables and ancillary activities - with a view to removing the designation over any surplus areas. This potentially could reduce the designated area in future for which s176 approval may be required.

In addition to future road corridors, Transpower's proposed designation will cross over Murphys Road to the south of Murphys Bush. A Watercare water main, Vodafone and Chorus underground telecommunication line and Nova gas main are located within Murphys Road. All these parties have been consulted in relation to the proposed designation and no concerns have been identified (see comments attached as Appendix G).

Vector Limited

As previously noted, Vector has existing gas and electricity assets in Murphys Road; and will install new gas and electricity assets in future roads within the designation to service the new residential areas. Vector has raised concerns that, in its current form, the proposed designation fails to adequately recognise and provide for the needs of Vector in terms of existing and future assets. These concerns include:

- The proposal to designate the entire road corridor;
- The absence of provisions that recognise and provide for the ability of Vector to access the designated area both in relation to existing and future assets;
- Concerns regarding the timeliness of the s176 process and potential cost implications of conditions of s176 approval; and
- The absence of information on appropriate distances between Transpower assets and infrastructure installed by Vector.

To address these concerns Vector is seeking:

- Conditions on the designation that:
 - enable Vector to access and work within the designation to operate, maintain and upgrade existing assets;
 - recognise and provide for future projects and works; and
 - specify minimum timeframes within which Transpower must provide responses to requests for access to the designated corridor.
- An Advice Note to provide guidance as to separation distances and clearances between Transpower's cables and Vector (and other utility operators) assets, and depths for new Vector assets.
- A mechanism to resolve differences of opinion regarding the reasonableness of conditions attached to a s176 approval.

Transpower's response is that:

- The designation width needs to encompass the full road width, for the reasons outlined in section 3.2 above;
- Transpower has been working with Vector in terms of the location of future Vector assets in relation to the cable design. As a result of this Transpower has altered its cable design to facilitate the installation of Vector cables and transformers at the locations marked on the plans in Appendix G;
- The s176 process is already provided for in the RMA and Transpower has well established processes to grant s176 requests (which are a common occurrence), in a timely manner. It is not considered appropriate to duplicate or replace this process through conditions on the designation, particularly as this is a third-party process outside of the control of Council;
- A dispute resolution mechanism is considered unnecessary, as this is already provided for under s179 of the RMA; and
- It is not possible to provide standard separation distances and clearances. For example, mutual heating needs to be modelled taking into account the technical/electrical parameters for the particular project and the ground conditions. Accordingly, conditions permitting generic work near the Transpower cable are inappropriate – they need to be considered on a case-by-case basis.

Given the alterations to Transpower's cable design and the mechanisms under s176 and s179 of the RMA, Vector's concerns are considered to have been appropriately addressed.

6.3 Roading Infrastructure

While it is noted this Notice of Requirement will result in an "overlap" in designations over Murphys Road, Auckland Transport's designation will have primacy over Transpower's. Therefore, Transpower's proposed designation will not adversely affect the ability for Auckland Transport to carry out their designated works along Murphys Road.

The outcome of the engagement with Auckland Transport is discussed in section 9.2 below.

6.4 Positive Effects

The OTA-WKM A & B transmission lines are nationally important infrastructure providing electricity to Auckland and Waikato from generation points around New Zealand. Relocating a section of the transmission lines underground will enable a greater residential development potential in the Flat Bush sub precinct C area, thereby supporting Auckland growth and intensification. However, there is a need to protect both the infrastructure and the public from the effect of unsanctioned works in the vicinity of this asset.

Designating the cable route and CTSs will ensure that the location, nature and extent of Transpower's underground cables and associated elements are clearly defined in the AUP. Designating the cable

route will also ensure that security of the underground transmission line is maintained in respect of separation from other utilities and the potential actions of third parties on and within the roading network as well as other land affected by the designation.

The importance of designating key transmission infrastructure is supported by the National Policy Statement on Electricity Transmission (NPSET), as it recognises the national benefits of transmission and the need for long-term strategic planning for transmission assets.

7. Additional Consents Required

No further resource consents will be required by Transpower from Auckland Council for work within the site.

Resource consents are already in place for the undergrounding of the OTA-WKM A & B transmission lines, construction of the CTSs and associated works. There is provision for ongoing maintenance works associated with the underground transmission line and the cable termination structures under the NESETA as permitted activities, subject to compliance with relevant conditions.

8. Alternative Locations and Methods

Given that resource consents have already been granted for the physical works associated with undergrounding a section of the OTA-WKM A & B transmission lines and constructing the associated CTSs, no alternatives have been considered in relation to the route required for the proposed designation. It is noted however that alternatives were considered in detail prior to selecting the preferred option for undergrounding the OTA-WKM A & B transmission lines (as discussed within the Assessment of Environmental effects referenced in LUC60320180).

Reliance on the Before-U-Dig service which alerts parties doing work over underground infrastructure assets as to the asset's location does not provide the protection afforded by designations. For example, should a telecommunications utility wish to install facilities close to the cables, and to break open the road for that purpose, section 135 of the Telecommunications Act 2001 would allow that utility to do that *"in accordance with any reasonable conditions that the local authority or other person who has jurisdiction over that road requires"*. Section 135 does not allow other utility operators with assets within the road corridor to impose reasonable conditions on that work. Only the local authority is given that power. The same would apply in regard to other utilities and their statutory rights. Transpower is the most appropriate organisation to determine suitable conditions for working near to National Grid electricity cables.

Utility access processes in roads provide property access rights to utility operators, but not RMA authorisations. Accordingly, Transpower is not using, and cannot use, the designation process to avoid any statutory obligations it has in respect of work in the road corridor. Transpower will still

undertake and comply with the CAR process (pursuant to the Electricity Act 1992) for access to construct and maintain works in roads.

Designation is considered to provide for greater protection of the assets as it will require third-parties to gain s176 approval under the RMA prior to undertaking works within the designation to ensure the National Grid assets are not compromised, as well as alerting plan users to the presence of the assets.

Designation is considered the most appropriate method for the ongoing security of the underground sections of the OTA-WKM A & B transmission lines and associated CTSs, particularly in relation to protection of the equipment from third party activity. As discussed in section 5.2 above, Policy 13 of the National Policy Statement of Electricity Transmission (NPSET) requires decision makers to recognise that the designation process can facilitate long-term planning for the development, operation and maintenance of electricity transmission infrastructure.

9. Consultation

The existing resource consents were granted following a non-notified process. The proposed designation is a protective designation only, rather than an enabling designation. As such the only relevant additional adverse effects beyond those authorised under the resource consents for the physical works, are those that relate to effects on other third parties wishing to undertake works within the designated area around Transpower assets.

Prior to lodgement of the resource consent for the physical enabling works (LUC60320180), Transpower engaged with Auckland Council to determine the parties who could potentially be affected by both Transpower's physical works, as well as the subsequent designation (being proposed by this NoR). A pre-application meeting was held with the following parties due to their role in providing infrastructure (current and future) in relation to the development of the wider Flat Bush area:

- Auckland Council – Plans and Place
- Auckland Council – Healthy Waters
- Auckland Council – Community Facilities
- Auckland Transport
- Watercare
- Vector
- McKenzie and Co – on behalf of the Developers

Prior to lodgement of this NoR, Transpower circulated a letter outlining the details of the proposed designation to the same parties that were consulted with in relation to the enabling resource consents i.e. Auckland Council, Auckland Transport, Watercare and Vector. In addition, Vodafone and Chorus have been consulted regarding the protective designation. A copy of the information

provided is attached in Appendix G, H and I. The outcome of the consultation following these letters is as follows:

9.1 Auckland Council

The response from Auckland Council is provided in Appendix H and summarised below.

- Parks Planning Department commented that the western CTS (at 36 Tir Conaill Avenue) is identified on the Flat Bush C Structure Plan as future open space. The possibility of conditions on the designation to deal with potential amenity effects has been raised.

Transpower response: It is considered that conditions around landscaping would not be appropriate on the protective designation, which is only concerned with third party activities, not the environmental effects of the physical works which were covered in the enabling consents granted. However, a landscape concept plan for planting within the CTS site and adjacent area is currently being prepared by the developer in conjunction with Transpower.

- Healthy Waters have not identified any concerns.

9.2 Auckland Transport

The issues raised by Auckland Transport and Transpower's response is provided in Appendix I and summarised below.

- Provision is sought for routine maintenance and repair on future roads as a designation condition.

Transpower response: Previously, there was a side agreement between Transpower and Manukau City (dated 2008) relating to works in roads. As an alternative to designation conditions, the possibility of extending this agreement to cover assets within the Flat Bush undergrounding project area has been raised with Auckland Transport. No response on this has been provided to date.

- A review condition on the extent of the designation, and the provision of "as built" plans is sought.

Transpower response: A draft condition requiring Transpower to review the extent of the designation has been volunteered. Further, a condition requiring the provision of "as built" plans has been included. Accordingly, it is considered that these requirements have been met.

9.3 Iwi

Transpower consulted with mana whenua groups understood to have an interest in the project area (within the Howick Local Board area) during the preparation of LUC60320180. Due to the protective nature of the designation, and the fact that the designation does not enable any further physical works beyond those consenting under LUC60320180, further consultation with mana whenua groups is not considered to be necessary.

9.4 Infrastructure Providers/Network Utility Operators

Watercare, Nova Energy, Chorus and Vodafone have all advised that they have no concerns with the proposal (see correspondence in Appendix G).

The response of Vector has been outlined under section 6.2 above.

9.5 Landowners

The landowners provided written approval to the enabling consents for the undergrounding and associated CTSs (LUC60320180). Similarly, affected party approval has been requested from the landowners for this NoR. These written approvals are expected to be forthcoming and will be provided when received.

10. Notification Assessment

Public Notification Assessment – 149ZCB

In relation to public notification, we do not request that the application is publicly notified.

It is noted that the application is not precluded from public notification because:

- there is no rule or national environmental standard that precludes public notification of the application;

However, public notification is not required in this instance because:

- as outlined above, the adverse effects of the proposal are less than minor (other than in regard to land where affected party approvals have or will be obtained)
- there is no rule or national environmental standard that requires public notification of the application
- there are no special circumstances that would warrant the application being publicly notified.

Limited Notification Assessment – 149ZCC

There are no affected customary rights groups or customary marine title groups and the land is not subject to a statutory acknowledgement.

For the reasons provided above, there are no parties considered to be adversely affected by the proposed designation to a minor or more than minor degree other than the landowners from whom written approval has been sought.

Written Approvals

Written approval for the proposal has been sought from the landowners and the approvals are expected to be forthcoming.

In summary, it is considered that the application can be processed on a non-notified basis.

11. Conclusion

Transpower has assessed the relevant matters as set out in s171(1) of the Act and concludes that is appropriate for the protective designation to be confirmed, subject to the recommended conditions. The proposed designation will enable the ongoing security of essential electricity transmission infrastructure that will benefit the people and communities of New Zealand.

For the reasons outlined in this Assessment of Environmental Effects, Transpower requests that Council process the NoR on a non-notified basis.

Appendix A

Land Requirement Plans

Appendix B

Certificates of Title

Appendix C

LUC603220180

Appendix D

LUC603220180 – A

Appendix E

Photographs of works

Appendix F

AUP Objectives and Policies Assessment

Appendix G

Outcome of consultation with utility operators

Appendix H

Outcome of consultation with Auckland Council

Appendix I

Outcome of consultation with Auckland Transport