

BEFORE THE BOARD OF INQUIRY

IN THE MATTER of the Resource
Management Act 1991

AND

IN THE MATTER of applications for
resource consent and
notices of requirement
by Transpower
New Zealand Limited
for the North Island
Grid Upgrade Project

**STATEMENT OF EVIDENCE OF PETER HOWARD PHILLIPS
ON BEHALF OF TRANSPOWER NEW ZEALAND LIMITED
(Consultation / social impacts)**

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INTRODUCTION

Qualifications

1. **MY** name is Peter Howard Phillips. I am the Managing Director of Dialogue Consultants Limited, which I set up in 1983. I hold a Doctorate of Philosophy. Over the last 22 years I have undertaken a wide range of public consultations both here and overseas, mainly on infrastructure development and public policy. I was also responsible for the social impact assessments on many of the infrastructure projects, as information gained during the consultation can provide an important input into the assessment of social effects.
2. **MY** principal roles in relation to the North Island Grid Upgrade Project (**Upgrade Project**) were to:
 - (a) assist Transpower New Zealand Limited (**Transpower**) to design and implement the community consultation; and
 - (b) carry out a social impact assessment.
3. I was first engaged on the Upgrade Project in August 2004 and have worked continually on it since then. During this time, I had extensive contact with affected and interested parties through meetings, correspondence and telephone conversations. I have also read most of the submissions made to Transpower, and analysed records of all the public meetings held by Transpower in the course of preparing reports on the consultation.
4. I have also read many of the submissions made to the Electricity Commission, and most of those made to the Board of Inquiry. The balance of the submissions to Transpower and to the Board of Inquiry were read by my colleague Dr Tom Ludvigson. We used a common framework to analyse the points made in the submissions.
5. **THROUGHOUT** the Upgrade Project, I have made extensive use of Transpower's database (known as GridTracker) of contacts between project personnel and affected and interested parties in monitoring and evaluating the outcomes of the consultation. I also attended presentations and hearings of

the Electricity Commission in Hamilton and Auckland to listen to community questions, comments and submissions.

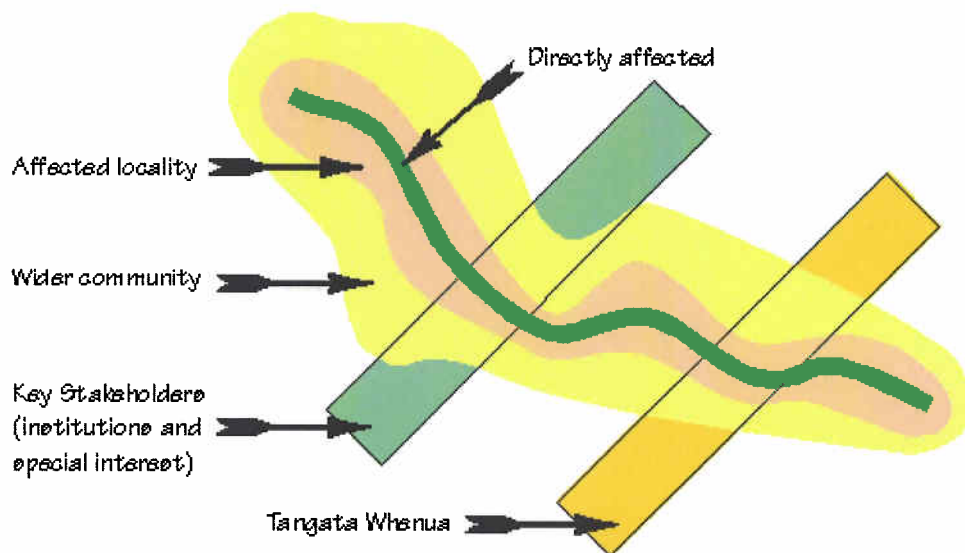
6. I confirm that I have read and am familiar with the Code of Conduct for Expert Witnesses in the Environment Court Consolidated Practice Note (2006). I have approached the preparation of this evidence in the same way that I would for the Environment Court.

Scope of evidence

7. **MY** evidence is in two parts. Firstly, I will discuss consultation process, (Part A), and secondly, the social impacts assessment associated with the Upgrade Project (Part B).
8. I discuss the following matters:
 - (a) the objectives of the consultation with the affected communities;
 - (b) the approach to consultation for the Upgrade Project;
 - (c) the consultation programme;
 - (d) the findings of the consultation which were considered when decisions were made on the Upgrade Project design; and
 - (e) the social impacts of the Upgrade Project.
9. **IN** terms of consultation, my evidence addresses only the consultation with the affected and interested members of the public. For the Upgrade Project, I have used my standard approach to describe these affected and interested parties. This divides them into five groups, which I set out and illustrate below:
 - (a) directly affected: parties whose properties would be physically affected by the construction and operation of the overhead and underground sections and substations that comprise the principal elements of the proposed 400 kV capable line (**proposed line**), and who would be liable for compensation;

- (b) affected locality: properties which may experience some effects of the construction and operation of the proposed line, such as construction traffic and visual intrusion;
- (c) interested parties: a wider community of people with some interest in the Upgrade Project;
- (d) key stakeholders: institutions and special interest groups, with or without geographical links to the affected area, but who take an interest in the Upgrade Project because of some wider concerns or responsibilities (such as statutory bodies and environmental groups); and
- (e) tangata whenua: reflecting the express recognition of the interests in the RMA as well as being affected parties.

Figure 1: Consultation groups



10. MY evidence focuses on the first three groups (a-c), although I have had some very limited contact with key stakeholders during the course of the Upgrade Project. Consultation with central and local government, and with other stakeholder groups will be addressed by Mr Campbell. Consultation with tangata whenua will be addressed by Mr Mikaere, and Mr Ngakete to whom I

provided some assistance in developing the plan for consultation with tangata whenua.

PART A: CONSULTATION

- 11.** **IN** this part of my evidence, I will identify and describe the consultation undertaken for the Upgrade Project. I will discuss the separate consultations on the three main parts of the Upgrade Project:
- (a) the proposed line;
 - (b) the underground cables; and
 - (c) the substations.
- 12.** I will also discuss the staging of the consultation. Consultation with communities along the two possible routes began in October 2004 and was largely completed in January 2006. This was signified by the public announcement of the final centre-line, tower locations, easement requirements, and transition station location. I say "largely complete" in that while the proposal was finalised in most respects, there were a number of aspects, such as the transition station, where consultation with individual landowners was continuing.
- 13.** **AS** a result of the decision of the Electricity Commission in April 2006 to decline what has become known as the "Original Proposal", the community consultation was restarted in October 2006 and continued to May 2007. At this stage Transpower confirmed the revisions to the northern end of the project including the cable route to Pakuranga, substation equipment at Pakuranga and the location of the transition station/substation between the overhead and underground sections at Brownhill Road, Whitford. As in January 2006, while the bulk of the proposal has been finalised, consultation continues as Transpower responds to specific issues, such as the crossing of Lake Karapiro. Contacts with individual landowners are also continuing, focussing largely on property and easement purchase and on possible mitigation measures.

Consultation objectives

14. I developed the consultation plans for the Upgrade Project within the framework set out by a Transpower report entitled "*Consultation Guidelines for Major Projects*". The consultation was specifically designed to meet the three parts of Transpower's "Commitment to Consultation" released by the then Chief Executive Officer, Dr Craven, in May 2004 contained in **Appendix 1**. These are to:

- "(1) Inform the public of Transpower's grid upgrade proposals by providing balanced and objective information that will assist people in understanding the issues, alternatives and proposed solutions;
- (2) Obtain public feedback to assist in the identification of potential environmental effects, and ways in which these can be remedied or mitigated; and
- (3) Consider feedback in finalising its proposals."

15. **IN** seeking to meet these commitments Transpower undertakes in its "Commitment to Consultation" to:

- (a) keep the public informed using "plain English" publications and material;
- (b) provide an opportunity for people to give feedback;
- (c) listen to and acknowledge comments; and
- (d) provide feedback on how public input influenced the decision.

Approach to consultation

16. **CONSULTATION** plans for each part of the Upgrade Project were designed to meet seven objectives:

- (a) that the purpose of the consultation was stated at the outset;

- (b) that the consultation was treated as a serious input into the decision-making on the Upgrade Project, rather than a mere formality;
- (c) that Transpower approach the consultation with an open mind and not merely present affected parties with a *fait accompli*;
- (d) that adequate information was provided to the affected and interested parties so that they could understand how they might be affected by the Upgrade Project;
- (e) that the affected and interested parties were given reasonable opportunities to express their views;
- (f) that Transpower did not make demands of the affected and interested parties; and
- (g) that Transpower's participation in the consultation process was underlain by reasonableness and fairness.

17. I discuss each of these objectives in further detail below.

Purpose of consultation stated

18. I consider that the purpose of the consultation was stated at the outset of the consultations on each element of the project. The initial announcement of the two possible routes of the overhead section on 28 October 2004, for instance, stated that the consultation was intended to provide an important input into the decision between these two route options for the proposed line. This focus on two routes was the result of the work in the preceding stages of the Area Corridor Route Easement (**ACRE**) process discussed by Ms Allen. From a consultation viewpoint, I consider this to be an excellent process as it meant the consultation was undertaken on routes that already met a wide range of criteria designed to minimise effects and ensure that they could be built. This process is much more preferable to the practice I have observed in some roading projects of blanketing wide areas with possible routes in the interests of being seen to explore "options". All this does is create uncertainty and distress for many people along the non-viable routes.

19. **THE** purpose of the consultations on the various other elements of the Upgrade Project was also stated, when these consultations began, as follows:
- (a) the consultation on the Otahuhu cable route was designed to identify possible adverse effects of the construction and operation of the preferred route, to identify possible mitigation measures, and to seek community input into the decisions on two route options between East Tamaki Road and Stancombe Road;
 - (b) the consultation on the Otahuhu Substation was designed to identify possible adverse effects of the installation of new equipment at the existing substation and to identify possible mitigation measures;
 - (c) the consultation on the Pakuranga cable routes was designed to identify possible adverse effects of the construction and operation of preferred route, to identify possible mitigation measures, and to seek community input into the decision on three route options between Point View Drive and the Pakuranga Substation;
 - (d) the consultation on the Pakuranga Substation was designed to identify possible adverse effects of the installation of new equipment at the existing substation, to identify possible mitigation measures, and to explore community preferences for air insulated switchgear (**AIS**) or gas insulated switchgear (**GIS**);
 - (e) the consultation on the Brownhill Road transition station/substation was designed to identify possible adverse effects of the construction and operation of a new transition station/substation, to identify possible mitigation measures, and to explore community preferences for AIS or GIS; and
 - (f) the consultation on an alternative route for the underground cable to the Pakuranga substation along Brownhill Road, Whitford Park and Sandstone Roads was designed to identify possible adverse effects of the construction and operation of the cable along this route to identify possible mitigation measures.

20. **THE** purpose of the consultation was stated in each case in the project newsletters and repeated at each opportunity through meetings, correspondence and conversations with affected and interested parties. For instance, the first project newsletter, issued in October 2004, stated *“Over the next six months we’ll be looking at a range of factors as we assess the possible routes for the new line. Our assessment will involve further investigations into technical and engineering suitability, and environmental, social and cultural impacts. We’ll also consider all the feedback from the consultation with landowners and occupiers along the possible routes, Tangata Whenua, stakeholders and local communities. This input will help us make an informed decision on the preferred route for the transmission line. The local community can contribute important local knowledge and information to add to the investigations already completed.”* This was then repeated in the presentation for the Information Days held in early November 2004 and attended by around 1600 people, in which slide 18 stated *“Now consulting on two routes, both of which follow the existing Arapuni-Pakuranga line (ARI-PAK) at least in part. A decision on the preferred route will be made in June 2005.”*

Consultation meaningful

21. **THE** second objective was that the consultation was treated as a serious input into the decision-making on the Upgrade Project, rather than be a mere formality. This objective was met in two ways:
- (a) by keeping affected and interested parties informed on the progress of the consultation, including providing feedback on the issues raised and opinions expressed in the consultation to ensure that there was comprehensive coverage of the topics of concern to the community and that they were being correctly interpreted; and
 - (b) providing inputs from the consultation into the range of decisions on the project design such as the choice between the two routes for the overhead section of the transmission line, and to the selection of switchgear at the Pakuranga substation.
22. **THE** consultation design for the initial phase of route selection included two ways of informing the community of the progress of the consultation. The first was the project newsletter issued in February 2005. This acknowledged the

opposition that had been expressed to both routes and listed the topics that had been raised as follows:

- (a) *"health/EMFs: Potential effects of electric and magnetic fields (EMFs) on individuals; communities and stock; separation distances between the transmission line and homes;*
- (b) *property value impacts and compensation: impacts on property values, property sales and subdivision, and associated stress; restriction of compensation to directly affected landowners (i.e. those whose land is actually required for the transmission line); rentals versus lump sum payments;*
- (c) *route identification: relative weighting given to people versus visual impacts, and Crown and Maori land during the route identification process;*
- (d) *undergrounding: more, if not all, of the line should be undergrounded;*
- (e) *cost: project decisions (e.g. design and undergrounding) should not be made on the basis of cost; and the line should be undergrounded despite being much more expensive, with additional costs to be spread across all electricity consumers;*
- (f) *environmental impacts: effects on native bush (particularly covenanted bush) and potential ecological effects on sites of significance; and visual intrusion;*
- (g) *land use: impacts on farming operations; and*
- (h) *alternatives, both transmission and non-transmission: suggestions included more generation in Auckland (which would deliver "an Auckland solution to an Auckland problem"), a HVDC (high voltage direct current) link between the South Island and Auckland, and undergrounding."*

23. **THIS** feedback was repeated in the Progress Meetings and community meetings held in February and March 2005. The presentation included slide 5 which listed the topics that had been identified and slides 8-20 discussing various responses by Transpower. The latter included investigations launched

in response to community feedback on a range of issues, such as undergrounding and High Voltage Direct Current (**HVDC**), as well as an analysis showing the impact on tower number of reducing the maximum tower height from 70 metres to 60 metres (a 25% increase in tower numbers). The Mayors and Chairs of the territorial authorities along the routes were also informed about this community feedback by Dr Craven at a Forum on 30 March 2005. At no stage then, or since, has feedback been received from the community suggesting that the range of issues identified in the consultation was not comprehensive, or that the way that they had been interpreted was incorrect.

24. I prepared a series of reports on the consultation outcomes during the course of the Upgrade Project based on submissions, meeting notes, correspondence, and records of phone calls. The first was a debrief on the Information Days to Transpower's Consultation Governance Group on 1 December 2004. These reports canvassed a range of matters from the choice between the two routes for the overhead section of the proposed line to the location of individual towers and the choice of substation technology. These reports were considered in the decision-making workshops held at various stages through the project which are described in the evidence of Ms Allen, and ultimately they contributed to a number of decisions on the Upgrade Project. The Amended Proposal to the Electricity Commission, for instance, included a substation with AIS at Brownhill Road, Whitford. The NoR was subsequently lodged with both AIS and GIS options. Following the consultation, Transpower decided to use GIS at the substation as preferred by the local residents.
25. **DURING** the consultation Transpower's case managers and field engineers met a significant number of landowners to discuss the proposed easement and the indicative positioning of the towers. A number of suggestions to move the towers to new positions were made by landowners. These requests were based on a range of considerations, including the visual effects of the line, subdivision potential, stands of native bush, and impacts on the operation of farms, such as access to raceways. A committee made up of Transpower staff and consultants, known as the Indicative Centreline Group, was convened to consider these landowner requests on tower position. I discuss these requests for tower moves in more detail later in my evidence.

Open minded consultation

26. **THE** third objective was that Transpower approach the consultation with an open mind and did not merely present affected parties with a *fait accompli*. This objective was reflected in the presentation of options for consideration, wherever practicable. Even in situations where there was only one route through an area, such as Clevedon, the route was 500 metres wide leaving open options for positioning the final alignment within the route.
27. **TRANSPOWER** also revisited a wide range of design features during the course of the consultation to address matters raised in the consultation including:
- (a) transmission technology: there was strong advocacy by the community of a wide range of transmission and non-transmission alternatives to Transpower's proposal from the first announcement of the Upgrade Project. Many parties, for instance, advocated undergrounding part or all of the proposed line. In response to the public input Transpower commissioned the following independent reports:
 - (i) "Preliminary feasibility assessment of 400 kV Cable extension beyond Ormiston Road";
 - (ii) "An International Survey of Reasons for Undergrounding Transmission Lines";
 - (iii) "Comparison of the Reliability of a 400 kV Underground Cable with an Overhead Line for a 200 km Circuit";
 - (iv) "Effect of short cable sections on reliability of a 400 kV Power Cable from Auckland to Whakamaru";
 - (v) "Factors Affecting the Viability of a 200 km 400 kV Power Cable from Auckland to Whakamaru"; and
 - (vi) "Preliminary Investigation of Using the Waikato River as a 400,000 Volt Cable Route."

These reports were made available on the project website and supplied to individuals and organisations on request. The content of these independent assessments supported the Transpower proposal so there were no changes made to the proposals as a result;

- (b) route selection at Hunua: concern was expressed by local residents about the cumulative impact of four lines through the Hunua Valley. The suggestion of an alternative route through the Hunua Ranges Regional Park was further investigated, but rejected;
- (c) route selection at Whitford: local residents in the Whitford area were unhappy with the choice made between the two route options from the proposed transition station site at 609 Ormiston Road and Brookby (section 1 of the 15 sections into which the routes were divided). After careful consideration of community input prior to the Interim Decision and available technical information the "1 West" option through the upper reaches of the Turanga Stream was chosen, rather than the "1 East" option which followed the alignment of the Arapuni-Pakuranga A line between Brookby and Sandstone Road. Following advocacy of the "1 East" option by some local residents, notably Mrs Catherine Tuck with whom I had a number of contacts over the issue, this decision was reviewed. This review did not identify any reason to change the initial decision and the western option was reaffirmed; and
- (d) alternative locations for the transition station/substation: under the Amended Proposal the transition station was moved from its location on 609 Ormiston Road (under the Original Proposal) to 149 Brownhill Road. The original site was considered unsuitable for the 400/220 kV substation at the end of the overhead section which is required by the staged implementation of the Upgrade Project (Ms Allen discusses the site selection process for this substation site in her evidence). Late in the consultation process Manukau City Council and residents at Brownhill and nearby advocated an alternative site in East Tamaki Road. The East Tamaki Road option was ultimately ruled out for a range of reasons. An alternative location on the adjoining property of Mr and Mrs Dodd at 143 Brownhill Road was suggested by the owners in the final stages of this consultation and

was investigated, but the Transpower site was assessed to be preferable.

Provision of adequate information

28. **THE** fourth objective was that adequate information be provided to the affected and interested parties so that they could understand how they may be affected by the Upgrade Project. A wide range of information was presented in oral, written, and electronic forms, as I discuss below.
29. **TRANSPOWER** established a call centre which was accessed by a freephone number. Members of the public could request information. A dedicated website was also established. The public could download all of the documentation that was made public throughout the consultation process (and can still do so today). People registered with the website were notified by email each time the content changed.
30. **THE** information Transpower made publicly available was at various levels of complexity and technical detail. This information ranged from press releases and plain language responses to frequently asked questions, through to fact sheets and information sheets on specific topics, to technical reports and detailed responses to complex questions from individuals and groups. The primary consultation documents are listed in **Table 1** on page 23, and set out more fully in **Appendix 2** to this evidence.
31. **ALL** landowners whose properties were crossed by one of the routes received a map or maps showing the portion of their property affected, along with information about the design of the proposed line, and issues such as noise, appearance, and electric and magnetic fields. Further maps were provided to landowners affected by the indicative alignment and proposed easement when the route decision was announced in July 2005. A revised set of maps was distributed in November 2005 as the result of changes made to tower positions made on the basis of consultation and technical assessments.
32. **A** significant amount of information was conveyed orally through meetings. In addition to a range of public meetings, Transpower and its consultants met a large number of individuals and groups opposed to the proposed line. For example, senior Transpower engineers met two representatives of the

Homeowners Against Lines Trespassers (**HALT**) group on 21 April 2005 to discuss a range of technical matters, including the use of HVDC for the proposed line. This meeting provided the group with direct access to Transpower staff with the expertise to address the technical issues that concerned them.

33. **TRANSPOWER** also identified that there was considerable community concern about electric and magnetic fields (**EMF**). From the outset, Transpower stated that National Radiation Laboratory (**NRL**) of the Ministry of Health was the relevant agency for people to discuss issues in relation to the appropriateness of the ICNIRP guidelines, which the Ministry has adopted and which Transpower follows. Transpower also organised an EMF Forum with international experts to provide information on EMF for members of the public. There were two sessions held on the 15 and 16 March 2005 in Hamilton and Matamata with a video link on the first evening to Pakuranga and buses provided to take people from Auckland to Hamilton if they preferred. The meetings were chaired by an independent facilitator and former Race Relations Conciliator, Chris Laidlaw. The panel of independent experts (which was chosen independently of Transpower) comprised:

- (a) Dr David Black - Occupational Medicine Specialist, Auckland University who is providing evidence to this Board of Inquiry;
- (b) Dr Andrew Wood - Biophysicist, Swinburne University, Melbourne, Australia;
- (c) Dr Ruth Miller - Department of Electrical and Computer Engineering, Kansas State University, Manhattan, USA;
- (d) Dr Jerry Bushberg - Clinical Professor, University of California, USA;
- (e) Martin Gledhill - National Radiation Laboratory (NRL), Christchurch.

34. **THE** forum was widely promoted including the provision of the details of the times and locations in the February 2005 project newsletter as well as the project website and local newspapers.

35. **IN** preparation for the forum my colleague Dr Ludvigson and I analysed all of the records in GridTracker to 16 February 2005, notes from the Information Days and other meetings, and a set of questions supplied by the Underground in Manukau group to identify matters relating to health and EMF raised by affected and interested parties. I also prepared a letter that was sent by Transpower to everyone recorded in GridTracker as having raised a health issue inviting them to forward questions to the expert panel to enable these affected and interested parties to have a role in setting the agenda for the forum. The analysis was used to define a range of topics, issues and questions for the expert panel. On the basis of this analysis, it appeared that many of the people who had expressed concern appeared to have only a modest level of understanding of the issues associated with EMF.
36. I did not attend the EMF forum as the meetings were designed to inform affected and interested parties about EMFs and health matters rather than to contribute to decision-making on the project and Transpower maintained its distances from the proceedings. While a number of people have challenged the ICNIRP standards in the course of the consultation, my responsibility was simply to report these views.

Opportunities to express views

37. **THE** fifth objective was that the affected and interested parties were given reasonable opportunities to express their views. The design of the consultation included opportunities for written feedback by members of the public via a freepost mailbox, fax, and a dedicated website, and oral feedback either face-to-face or by telephone.
38. **AN** example of the opportunities for feedback provided in the consultation was when the interim decision was included in the consultation design for the Route Phase (when the choice was being made between the East and West options). This interim decision was incorporated as a step in the process to give affected and interested parties on both routes an opportunity to critique the initial reasoning used by Transpower to select the West Route, before the final decision between the East and West routes was made. The letter sent by Transpower on 13 May 2005 was accompanied by a fact sheet setting out the process by which the preferred route was selected.

39. **THIS** phase of consultation also gave the opportunity for people to visit local "drop-in centres" to clarify any issues and express their views, as well as being able to make written and oral submissions.
40. **TWO** hundred and forty submissions were received from affected and interested parties prior to the decision-workshop which made the interim decision on the preferred route. These submissions were a response to the general invitation to give feedback. I analysed these submissions with my colleague Dr Tom Ludvigson and the information was included in a report to the decision-workshop. This became the basis for further in-depth studies by the environmental team, prior to the interim route decision.
41. **DR LUDVIGSON** and I then analysed the 405 submissions from individuals and organisations on the Interim Route Decision. There was nominally a period of three working weeks for submissions although in practice Dr Ludvigson and I analysed late submissions as well, some coming in several days after the deadline. The comments in the submissions were initially classified into 96 topics and then grouped under 26 themes. This analysis built on the classification I outlined earlier in my evidence. The topics most frequently mentioned were:
- (a) alternatives, with 519 mentions;
 - (b) economic/financial effects including reduction in property values, 306 mentions;
 - (c) the consultation, 279 mentions;
 - (d) EMF/health issues, 209 mentions; and
 - (e) visual effects, 204 mentions.
42. **THE** full listing of the 26 themes is provided in **Appendix 3**. I prepared a report on the consultation including the submissions entitled "*Summary of Consultation from Project Announcement to Final Decision On Route Options for the 400 kV overhead line: Specialist Report 2*" which was used in making the final decision on the preferred route.

No demands

43. **THE** sixth consultation objective was that Transpower did not make demands of the affected and interested parties. The way this was achieved is perhaps best illustrated in the Easement Phase between July and December 2005. In the Easement Phase, Transpower sought to gain access to properties along the indicative alignment. This was to consult with landowners on the indicative tower positions and, sometimes, to undertake archaeological, ecological or geotechnical investigations.
44. **THERE** were people along the length of the proposed line who did not wish Transpower to enter their properties. This refusal of access was particularly apparent in the South Waikato where a group of landowners collectively refused to engage with Transpower during the Easement Phase when the alignment of the proposed line and tower positions was being fixed. To progress the work Transpower used available information including high resolution aerial photographs. The objective of not making demands (in this case for access) was met by respecting the refusal of access.
45. **AT** the same time, Transpower remained open to talking to landowners and occupiers. A letter from Transpower to all affected parties on 4 November 2005 stated that *"Some landowners have refused to engage with us and, in doing so, they are missing an important opportunity to influence the final alignment of the line. We still hope to talk to these landowners who haven't yet provided feedback. It is important to understand that talking to Transpower does not imply any acceptance of the project, nor would it compromise a landowner's rights to lodge a submission through the Resource Management Act processes still to come"*. This letter was accompanied by a revised map showing the location of the line and towers following consultations between July and October 2005 during which the position of approximately two thirds of the towers had been changed from those shown in the Indicative Centreline issued on 19 July 2005. In my opinion, Transpower took all appropriate steps to engage and inform people and make the consequences of non-engagement clear, while avoiding making demands on affected and interested parties.

Reasonableness and fairness

46. **THE** final objective was that Transpower's participation in the consultation process was underlain by reasonableness and fairness. Reasonableness was ensured by Transpower proceeding in good faith, being transparent on its intentions, and responding appropriately to feedback from the community. The consultation was challenged by a number of people as being unresponsive to some community inputs. These particular inputs, however, typically related to matters outside the ambit of the consultation or outside Transpower's remit as a transmission company. For example, many people consulted expressed a strong preference for non-transmission options. Favoured measures included:
- (a) generation close to demand in Auckland and Northland (from a variety of sources including gas, nuclear, wind, and tidal energy);
 - (b) enhanced energy efficiency; and
 - (c) more extensive use of solar energy (both photovoltaic and water heating).
47. **MANY** of the technical matters which caused disaffection (including the choice of 400 kV Alternating Current technology) were addressed through the Electricity Commission's consultations and decisions on Transpower's investment proposals. Prior to the Electricity Commission's decision, Transpower commissioned a number of studies in direct response to community advocacy of alternative solutions. These solutions included long distance undergrounding of high voltage lines (as discussed earlier in my evidence) and the use of HVDC. Two independent reports were commissioned providing an assessment of HVDC Transmission Options between Whakamaru and Auckland and a comparison of HVDC and High Voltage Alternating Current Grid Upgrades. This work also revisited topics previously canvassed in Transpower's own studies of alternative solutions, including the choice of 400 kV AC, and the publicly advertised "*Request for Information on possible non-transmission solutions*" released on 27 September 2004.

48. I consider that fairness between affected and interested parties was ensured by appropriate resourcing of the consultation to ensure equitable access to information and ease of provision of feedback. This process included the appointment of case managers to liaise with landowners in specific areas, so that landowners could receive individual attention. Initial contact details of the case managers were provided in letters sent out to landowners and occupiers. The case manager approach is useful as it ensures continuity in the relationship between the affected parties and Transpower. The recording of all interactions with the affected and interested parties in the contacts database enabled these interactions to be monitored by the case managers' supervisor at Transpower, Transpower's consultation staff, and myself. For early consultation, an environmental advisor was also "twinned" with the case manager to undertake visits, to ensure that people understood the processes, and that any environmental issues which arose could be addressed.
49. **THE** consultation process also included conducting meetings at various locations and the use of a range of approaches to communicate with affected and interested parties. For instance, at the Otahuhu end of the line there are a significant number of Pacific peoples and Maori living along the cable route through Otara. Both of these groups have strong oral traditions and a cultural emphasis on face-to-face meetings, rather than written communications. I addressed these cultural preferences in the consultation plan by including broadcasts in six Pacific languages and English on the local Pacific language radio station (Radio 531pi). Drop-in centres were also established at two local libraries which were operated six days per week.
50. **THE** contacts database called "*Grid Tracker*" was developed by Transpower to record property information for land along the routes and to keep a record of all incoming and outgoing interactions between Transpower and affected and interested parties, including mail, email and phone contacts, visits and meetings. GridTracker recorded 751,576 events between 28 October 2004 and 17 January 2008 when this evidence was drafted. This included 7953 contacts initiated by the affected and interested parties. During the course of the Upgrade Project, Transpower responded to 1657 postal enquires and 3781 telephone inquiries.

CONSULTATION STAGES

51. **HAVING** discussed how the objectives of the consultation were achieved I will now discuss some of the detail of the consultation programme.
52. **AS** I noted earlier, the consultation was undertaken in two stages. The first stage was on the "Original Proposal". It ran from October 2004 to January 2006. It comprised three phases:
- (a) 28th October 2004 to 13th May 2005: This stage began with Transpower's announcement of the Upgrade Project and involved extensive efforts to ensure that affected and interested parties were informed about the proposal. In April 2005, I prepared a report based on information gathered from the communities along the two routes which was used in making the interim decision on the preferred route;
 - (b) 14th May 2005 to 18 July 2005: This stage began with the announcement of the Interim Preferred Route. Affected and interested parties then had the opportunity to make written and oral submissions on Transpower's preference for the western route. I prepared a report based on these inputs which was used in making the final route decision; and
 - (c) 19th July 2005 to January 2006: Consultation closed with the public announcement of the final centre-line, tower locations easement requirements, and transition station location.
53. **THE** consultation on the underground section from Ormiston Road, Whitford, to the Otahuhu Substation, and on the Otahuhu and Whakamaru Substations under the Original Proposal was undertaken between August and November 2005.
54. **THE** second stage of the consultation was on the "Amended Proposal" from October 2006 to April 2007. It covered:
- (a) the proposed new transition station/substation at 149 Brownhill Road;

- (b) the cable routes from the proposed substation at Brownhill to the Pakuranga Substation; and
- (c) the upgrade of the Pakuranga Substation.

55. **ORIGINALLY**, it was anticipated that the second stage would be completed in early 2007. However, the duration of this stage of consultation was extended twice to address issues raised in the consultation as well as technical matters. The Upgrade Proposal was very largely finalised in May 2007. It is at this date that I consider the main community consultation to have been concluded. Nevertheless, consultation with individual landowners and organisations (including some territorial authorities) continues on a range of matters. These principally relate to mitigation measures and they run in parallel to negotiations on the purchase of easements and access agreements.
56. **FROM** the announcement of the final decisions on the alignment and tower positions, the emphasis of Transpower's interactions with landowners south of Brownhill Road shifted to information rather than consultation as the Amended Proposal contained no significant changes from the Original Proposal in the overhead section. The previous consultation therefore remained valid. While the line is now to be initially energised at 220 kV, the Amended Proposal uses the tower positions and configuration announced in January 2006 except where these may subsequently have been modified in consultation with individual landowners.
57. **AFFECTED** and interested parties south of Brownhill Road were informed by letter and email notification (if they had signed up for this service) about the Amended Proposal, but were not asked for input on changes mooted for the northern section of the line as they were unaffected by these changes.
58. **THERE** were also a number of negotiations over the purchase of properties and of easements and the securing of access agreements which were underway in the overhead section in parallel with the consultation on the Amended Proposal.
59. **KEY** dates in the consultation are set out in **Table 1** along with details of the information which was sent out at the time:

Table 1: Consultation timetable

Element:

O=Overhead section

U=Underground cable section

T=Transition station

S=Substations/substation equipment

Key activities	Collateral	Date(s)	Element			
			O	U	T	S
Route phase						
Public announcement of two possible route options for further investigation and public consultation	Newsletter 1, Information sheets, website	28OCT04				
Information Days at Whitford, Clevedon, Hunua, Mangatangi, Maramarua, Te Hoe, Tahuna, Morrinsville, Matamata, Te Miro7, Tirau, Putaruru, Horahora, and Mangakino	Presentation	08–16NOV04				
Community meetings at Kaihere, Hunua, Mangatarata, Te Hoe, and Mangatangi		09DEC04–22MAR 05				
Project update	Newsletter 2	10FEB05				
Route phase (continued)			O	U	T	S
Progress meetings at Whitford, Clevedon, Maramarua, Morrinsville, Matamata and Tirau		22FEB–03MAR05				
EMF/Health forums (Hamilton and Matamata video relay to Pakuranga)		15 – 16MAR05				
Informal drop-in sessions at Whitford, Clevedon, Hunua, Ngatea, Huntly, Matamata, Cambridge, Tokoroa, and Mangakino		06–07APR05				
Project update	Info-sheet	29APR05				
Public announcement of Transpower's Interim Decision on Preferred Route	Fact Sheet	14MAY05				
Submission period - Interim Preferred Route		14MAY – 03JUN05				
Oral submissions on Interim Preferred Route (nine locations)		14–15JUN05				
Public announcement of decision on Final Route and release of indicative centre-line on property maps to affected landowners	Newsletter 3, property maps, revised info-sheets	19JUL05				

Easement phase						
Consultation with affected landowners on indicative centre-line and tower positions		19JUL05 - 03NOV05				
Public announcement of preferred underground cable route, proposed substation equipment at Otahuhu, and proposed substation site at Whakamaru	Underground Cable Newsletter 1	25AUG05				
Further information on proposed substation site at Whakamaru to landowners living in the vicinity	Letter and infosheet to landowners	NNSEP05				
Formal consultation on the proposed transition station site at 609 Ormiston Road		24AUG05 - 26JAN06				
Informal drop-in sessions (two South Auckland locations)		26AUG - 05SEP05				
Feedback period - underground cable section, Otahuhu substation		25AUG - 20OCT05				
Drop-in session (Whakamaru)		15SEP05				
Oral submissions - underground cable section, Otahuhu substation and transition station		20OCT 05				
Project update on revised indicative centre-line and delay confirmation of final centre-line, tower locations and easement requirements	Revised property maps to affected landowners	4NOV05				
Period for further landowner feedback on revised indicative centre-line		04 - 28NOV05				
Public announcement of final underground cable route, confirmation of substation equipment at Otahuhu and new Whakamaru North substation site	Underground Cable Newsletter 2	24NOV05				
Public announcement of the final centre-line, tower locations and easement requirements, and transition station location	Newsletter 4	26JAN06				
Amended Proposal						
Project update responding to draft decision of Electricity Commission not to approve the Original Proposal	Letter to all affected and interested parties	01MAY06				
Project update advising intention to submit a staged implementation proposal	Letter to all affected and interested parties	09JUN06				

Amended Proposal (continued)	Collateral	Date(s)	O	U	T	S
Public announcement of the Amended Proposal including substation upgrade at Pakuranga, proposed new transition station/substation at Brownhill Rd Whitford, and cable route options	Newsletter 5 and Infosheets on Pakuranga substation/ cable route options, and Brownhill Rd proposals	24Oct06				
Feedback period – Pakuranga substation, cable routes, Brownhill Road transition station/substation		24OCT06 - 01DEC06				
Informal drop-in sessions at Botany Library		27OCT - 11NOV06				
Project update (for information only) to landowners along overhead section on submission of the Amended Proposal	Letter to all affected and interested parties	27OCT06				
Project update to landowners advising intention to finalise preferred substation and transition station sites, finalise cable routes and Pakuranga substation equipment	Letter to affected parties	01FEB07				
Project update advising landowners along overhead line and vicinity Whakamaru substation of intention to negotiate further easements	Letter to affected parties	01FEB07				
Extended consultation with landowners near the proposed Brownhill Rd transition station/substation	Specialist reports on geotechnical and noise issues	02DEC06 – 27MAR07				
Notification of landowners/residents of new analysis of route options from the proposed Brownhill Road transition station/substation to Caldwell's Road after community feedback and engineering studies	Letter to affected landowners	27FEB07				
Further consultation on cable route options with landowners/residents along Brownhill Road, Whitford Park Rd, Sandstone Rd and Regis Park to Ormiston Road		27FEB07 – 30APR07				
Meeting with residents along the alternative cable route running along Brownhill, Whitford Park and Sandstone Roads	Presentation	14APR07				
Project update on changes at northern end of the line and the start of the RMA processes	Newsletter 6	28MAY07				

60. **IN** addition, to the contacts listed in the table there were a large number of meetings with individual landowners and groups over the course of the consultation. These meetings included those with school boards of trustees and the New Era Energy (**NEE**) and HALT groups, a number of which I participated in. In these cases, records of the meeting were provided to attendees for review, amendment as appropriate, and ratification. There were also meetings between Transpower and the full committee of NEE on 20 January 2005 and with the South Waikato subgroup of NEE (mainly representing landowners south of Karapiro and Arapuni) on 25 August and 8 November 2005. GridTracker records show that representatives of NEE also attended meetings of Mayors/Chairs Forum in March 2005 and again in September 2005. This Forum is described in the evidence of Mr Campbell.

Community feedback

61. **AS** discussed earlier, Transpower's focus for the first part of the consultation was the choice of route for the overhead lines. Underpinning the community feedback in the early months of the consultation on the overhead section was an almost universal opposition to overhead lines *per se*, irrespective of the choice of route. Generally, the only variation from this opposition was a measure of acceptance of HVDC overhead lines. This acceptance appears to have been based on an expectation that the structures would be similar in height to the existing ARI-PAK A line and that the EMFs would be less.

62. **MUCH** of the discourse collected from meetings, and written feedback spelled out the aspects of overhead lines that were considered objectionable. This feedback highlighted the following issues:

- (a) Concerns about the perceived health risks posed by the EMFs generated by transmission lines featured strongly in opposition to the overhead line design. There was also some more limited discussion of the alleged impact of corona ions. People raised concerns relating to the potential effects of EMFs on people, horses and other stock. Some people and organisations spoke or wrote about "*unknown health related issues*".

- (b) A common theme raised by people in opposition to Transpower's use of the ICNIRP guidelines was that many other items (including asbestos, smoking, Agent Orange, and nuclear tests in the Pacific) had once been thought to be safe and then shown not to be. A perceived uncertainty around EMF led a number of people to query whether Transpower had an insurance premium for future health risks. In its submission on the interim route decision, Waikato District Council queried whether Transpower would indemnify landowners and the Council against any liability claims for health effects arising from the operation of the transmission line.
- (c) Some of these concerns were personal, and included concerns expressed by persons with cancer in remission, a pacemaker, a brain aneurism, another who reacted with tingling sensations when in the vicinity of existing lines, and the mother of a child who had epilepsy (and whose ability to live and work on their farm would allegedly be jeopardised). Claims were made in two localities of higher incidences of depression, stress, suicide, and cancer. This assertion was echoed in one submission on the interim route decision that stated the health issues were both physical and mental. It was also asserted in another submission on the interim decision that EMFs may increase somatic cell counts in dairy cows, causing possible milk quality issues, demerits and down-grading by dairy companies and loss of production and income to farmers.
- (d) The indicative height of the towers (ranging from 40 to 70 metres) was a major focus of community concern. This focus was because of their visual effects and other consequential effects that flow from the visible nature of the towers such as a perceived loss in property values. Subsequent discussion of the average height, and height distribution, of the towers has apparently done nothing to dislodge the perception of the "eyesore" of 186 km of "70 metre" "monstrosities" "marching" across the countryside.
- (e) A significant number of people contended that towers were "old/archaic/Third World technology", notwithstanding information presented by Transpower to show current widespread use of overhead lines in high voltage transmission.

- (f) Assertions were also made that such towers "*offend the landscape*", that they are incompatible with the country's "*clean and green*" image, and that they would degrade the utility of the image of the countryside as an overseas marketing tool for our produce.
- (g) Concern was also expressed that the proposed towers would be significantly higher than the mature height of native vegetation, and therefore harder to integrate into the environment than the existing towers. There was also a perception by submitters that the proposed line would involve a "*scorched earth*" policy, involving a ban on planting of vegetation under the proposed line, and the removal of existing vegetation along the alignment, including stands of mature bush (some of which are held in private and QEII covenants). This was considered by submitters to exacerbate the visual impact and also to reduce the ability to use vegetation to screen the towers and integrate the structures into the landscape.
- (h) While visual intrusion was seen as a universal issue, specific areas where submitters suggested that the line would compromise high landscape values which had been, or were being officially recognised, included:
 - (i) the Whitford scenic ridgeline;
 - (ii) the Hunua Regional Park which the Auckland Regional Council noted was an "*Outstanding Natural Landscape*" in the Auckland Regional Policy Statement proposed plan change; and
 - (iii) Special Landscape Areas defined in the Waipa District Plan.
- (i) Loss of property value was the most common concern raised by submitters, associated with the perceived visual effect of the towers, after the effect of visual intrusion into the landscape. Loss of property value was mentioned specifically 139 times in the submissions on the interim route decision, with a further 44 mentions of the issue of loss

of future subdivision potential, and 18 mentions of the compromising of future expectations/retirement plans.

- (j) In addition to loss in value, it was suggested that properties that could be subdivided would potentially lose subdivision potential because the proposed line may limit the ability to divide the land into functional lots while maintaining suitable separation distances. Eight – submissions on the interim decision indicated that they had subdivision in progress, or planned, in areas where the planned subdivision was permitted.

63. **THE** feedback also challenged the need for the proposed line and identified a wide range of alternatives to its construction.
64. **CONSISTENT** with the objection to overhead lines, was strong advocacy of undergrounding (including undergrounding the whole route from Whakamaru to South Auckland). This advocacy continued despite Transpower's explanations of the technical difficulties, as well as increased costs compared with overhead lines.
65. **MUCH** dissatisfaction was expressed about the consultation process in these early months. At the heart of the issue for some people was a perceived lack of any overall strategy for the development of the electricity industry in New Zealand. This, it was asserted, resulted in piecemeal decision-making which was driving Transpower to propose the new line when other options, such as generation close to the demand and demand-side-management, would be more in the public interest.
66. I consider that, in part, this dissatisfaction was a result of a lack of understanding of the limits of Transpower's mandate as a transmission company. These limits resulted from the way the electricity industry was restructured in the 1980s and 1990s. People had not fully understood that generation and transmission are no longer centrally planned in the way they were under the New Zealand Electricity Department and more recently the Electricity Corporation of New Zealand (**ECNZ**). Even after Transpower was separated out from ECNZ in 1992, I was aware of the strong co-ordination between the two organisations, as I was working with ECNZ at the time on strategic planning. In my opinion, this is the first project of national

significance where the effects of the restructuring and the establishment of the wholesale electricity market have had a profound effect on consultation for a major project. Many people seemed not to understand the restructuring and the institutional framework and didn't want to accept the limitations that Transpower operates under.

67. **CERTAINLY**, the lack of central planning or co-ordination was a source of dismay for many people with whom I had contact through the consultation process. In practice, however, Transpower demonstrated that it had considered alternatives to transmission in assessing the need for the Upgrade Project. However, Transpower repeatedly stated that to implement generation was outside its scope. Transpower continually highlighted that it is the role of the Electricity Commission, as regulator, to consider alternative solutions, and the role of government to determine the structure of the industry.
68. **ULTIMATELY**, Transpower must work within the parameters of the Resource Management Act, the Public Works Act, the Electricity Act, the State Owned Enterprises Act and other relevant legislation and within other frameworks such as its Statement of Corporate Intent. These give Transpower various rights and responsibilities. My perception was that what the communities wanted, in some respects, was a different set of institutions and a different set of rules.
69. **AFTER** an initial focus largely on generic issues, the feedback shifted towards more location-specific inputs during March 2005. In some cases, these inputs provided very useful descriptive information that increased Transpower's and its consultants' understanding of the communities and localities through which the two route options passed. I collated this information in a report entitled "*North Island 400kv Backbone Investigation Project Environmental Phase 2: Summary Of Consultation Prior To Interim Decision On Route Options: Draft Working Paper: 12th May 2005*". The report was one of a number which were used in making the interim decision on the preferred route which was announced on 14 May 2005.
70. **THE** report covered community feedback on the following generic topics in addition to matters related to health/EMFs, visual effects, and the loss of property value which I discussed earlier in my evidence. These generic topics were as follows:

- (a) need for the Upgrade Project: challenges to the Upgrade Project started with a rejection of the need for the Upgrade Project and, in particular, the assertion that it had not be demonstrated that power transmission was the best solution. Initially, there appeared little sympathy for Auckland and Northland's potential lack of supply capacity in coming years, particularly in the southern portion of the potential route. However, over time there was growing acceptance that there was a real issue, and some support was expressed for the need to protect a future power route into Auckland, given Auckland's economic importance, likely growth and the limited potential of new generation within Auckland.
- (b) compensation: discussions on compensation largely focused on three main themes:
 - (i) coverage: in particular, the perceived inequity of excluding impacts outside the easement (especially the visual effects on adjoining properties);
 - (ii) amount: disbelief that the amounts (total available for the project) reportedly allocated to compensation were adequate; and
 - (iii) type: with a preference for a rental rather than a lump sum payment.
- (c) route selection: One of the more dominant themes in relation to route selection was a perception that people have been under-valued or ignored in the assessment process and that undue weight may have been given to visual impacts, and also to Crown and Maori land. At one of the Information Days a response from Mr Dougall Campbell of Transpower that a social impact assessment would be done as part of the Notice of Requirement documentation on the preferred route was not well received. Submitters raised that there is an apparent contradiction in Transpower asserting that it wanted to avoid settlements, but it was perceived that the proposed line was "*going through*" Hunua and as "*too close*" to Morrinsville.

- (d) Considerable interest was expressed in the criteria and process that would be used by Transpower for choosing between the two route options. Emphasis was placed on the need for a long-term solution that considered the importance of social, environmental and cultural considerations in addition to project economics.
- (e) – The issue of how cumulative effects were to be assessed and mitigated was also raised. This was of particular concern in terms of the cumulative impact of the lines in the Waiterimu Valley. A number of people in that area objected to the way the replacement of the ARI-PAK A line was interpreted by Transpower and its consultants. While in visual terms the impact of replacing the existing 110 kV ARI-PAK A line with a 400 kV capable line may be mitigated by the presence of the three Otahuhu-to-Whakamaru lines through the area, (referred to by Transpower as OTA-WKM A, B and C lines), some land owners considered that they were already doing their fair share for the country with these existing lines and any new line would be an unreasonable imposition.
- (f) cost: during the early stages of the consultation, there was much discussion about cost being an unacceptable basis for decision-making on project design in general, and undergrounding in particular. There was a perception at this stage that cost was Transpower's primary, if not sole concern, reinforced by early emphasis on the rejection of undergrounding on cost grounds. This was strongly linked to the notion of rural people subsidising Aucklanders by the uncompensated impacts outside the easement.
- (g) Placing the whole route underground was asserted by some people as a way in which the so-called "true" cost (taking into account effects outside the easement) of a national facility could be taken into account. This cost would then be spread across all consumers around the country (the National Grid being a national facility), not borne selectively by landowners on the route in rural Waikato and South Auckland.

- (h) transmission and non-transmission alternatives: both transmission and non-transmission options were advocated, including upgrading the existing infrastructure, undergrounding, HVDC, underwater routes, generation in Auckland and Northland, domestic self-generation such as solar heating, and energy efficiency measures.
- (i) ecological effects: there were widespread concerns about the potential impact of new transmission lines on ecological values at both the individual property level (including covenanted bush), as well as impacts on the conservation estate. Notable amongst the latter include the Hunua Ranges where there is a Kokako reserve, and bird flight paths to the sites at the Miranda coastal wetlands (a key Godwit site) and Maungatautari.
- (j) economic effects: concerns included effects on airstrips/topdressing, constraints on farming operations and development, loss of subdivision opportunity, effects on forestry, and multiplier effects on the economy. Also mentioned were potential effects on tourism and recreation.
- (k) safety: concerns about safety were expressed over a number of matters including tower topple, aircraft operations and school children climbing towers close to their schools.
- (l) noise: concerns about noise were expressed both in terms of aeolian noise and insulator noise with many references to insulator noise on misty mornings in the Waikato.
- (m) Maori issues: matters related specifically to tangata whenua did not feature strongly in the consultation up to the Interim Decision beyond references in some localities to waahi tapu, pa sites and potential impacts on some marae. It was suggested by Waipa District Council in its submission of 4 April 2005 that the proposed line would challenge the mana and visual appearance of hills in its area, the retention of which, it asserted, is of paramount importance to Iwi. The submission make specific mention of Mt Ruru, which is discussed in the evidence of Mr Lister. I am not aware that Iwi made

any mention of Mt Ruru in the consultation with tangata whenua undertaken by Mr Mikaere and Mr Ngakete.

- (n) legislative and regulatory framework: considerable concern was expressed that the legislative and regulatory framework that Transpower operates under has too narrow a focus. Specifically concern was raised that the framework only takes into account a narrow range of operational and cost considerations at the expense of wider community and environmental objectives. An example of this was seen to be the way that the perceived effects on properties outside the easement are not covered by the compensation provisions of the Public Works Act. This was considered to result in grid upgrade proposals that are the least cost which are capable of obtaining RMA approvals. It was also the source of some criticism of Transpower which was perceived to be pre-judging the outcome of the Electricity Commission process by saying that undergrounding the whole line was not affordable as well as not technically desirable.

- (o) lack of trust in Transpower: widespread distrust was expressed about Transpower and its information provision. There was a perception, backed up by citation of the compulsory purchase provisions of Section 23 of the Public Works Act, that the consultation was a sham. Submitters raised concerns that the proposed line would proceed anyway. In terms of health effects, the offer of international experts to speak at the EMF/Health Forum was welcomed, but submitters were concerned that Transpower would choose people with an opinion that the company could accept. A lack of trust was apparent in submitters with a view that:
 - (i) Transpower was trying to change the RMA to suit its case (this was at the time when what was to become the RMA Amendment Act 2005 was in Bill form);
 - (ii) that the proposed line was a foot in the door for future lines along the same alignment; and
 - (iii) that the rejected East route would be retained as a "standby" option even though Transpower had explicitly said

that it was no longer under consideration once the preferred route was announced on 19 July 2005.

71. **MY** report on the consultation prepared in May 2005 also provided a detailed commentary on community inputs related to places along the two routes from Ormiston Road to Whakamaru. It contained specific information about the localities crossed by the two routes based on the local knowledge of the affected and interested parties. Examples include:

- (a) in the peri-urban areas of Whitford, Brookby and Clevedon, the construction of the proposed 400 kV overhead line was perceived to compromise the development strategy for the area including:
 - (i) changes to the Rural 1 and Special Rural 1 provisions of the Manukau District Plan, (Plan Change 8 Whitford Rural was subsequently notified on 8 July 2005);
 - (ii) its landscape values, particularly in relation to the ridge along which Redoubt Road runs;
 - (iii) subdivision potential of individual land holdings; and
 - (iv) aircraft movements (including flight training) related to Ardmore Airport;

- (b) in the Hunua area, local matters included, but were not limited to:
 - (i) proximity to Hunua and Paparimu schools and Camp Adair;
 - (ii) the fault line;
 - (iii) flooding in the Wairoa Valley;
 - (iv) peat swamps in Paparimu-Happy Valley;
 - (v) heritage oak trees;
 - (vi) areas of covenanted native bush and wetland;

- (vii) housing development across the Sky High Road ridge;
 - (viii) potential impact on an organic farm and a natural healing business;
 - (ix) local tourism operations and extensive recreation activities, including horse trials and pony club, fishing, cycling, tramping, tennis courts, and possum hunting;
 - (x) low level flying through the valley; and
 - (xi) the cumulative effect of the four lines through the area;
- (c) the Mangatangi/Maramarua/Mangatawhiri area had a range of features which were considered by local residents to be affected by the proposed route. These features included:
- (i) many areas of significance to local Maori in the form of Pa sites and ancestral land, notably Whatarua Pa and Waikarakia;
 - (ii) a complete example of a Redoubt system from the New Zealand Land Wars, plus the historic Paparata Pa site located on the oldest farmed land in the Mangatawhiri District;
 - (iii) flight paths for birds from the Manukau Harbour and tourist access to the Miranda Shorebird Centre;
 - (iv) tourism access route to the tourist attractions of Miranda Hot Pools and the Coromandel;
 - (v) the "*internationally recognised*" Miranda Chenier Plains which are protected under the Franklin District Plan; and
 - (vi) widespread, but unpredictable, occurrence of springs and "*tomo holes*" (at the time Transpower was removing an existing pylon in this district because of a slip);

- (d) on the eastern side of the Hapuakohe Range concern was expressed about the potential impact of the proposed line. There are several significant areas of native bush located in that area, which form part of the Hauraki Ecological Corridor, as well as having landscape and soil conservation water quality/values. These areas include:
- (i) Kaihere Bush;
 - (ii) Te Koupa Bush Stand;
 - (iii) Mangawara Bush; and
 - (iv) Waikaka Stream bush;
- (e) the eastern route would have affected ten to twelve airstrips in areas where the steep nature of the land precludes other ways of applying fertiliser (such as by truck or tractor). Some of the airstrips were set up so that farms on the Hauraki Plains could use them during the wetter times of the year when no ground-based fertiliser application can occur. It was considered by landowners and occupiers to be impossible to relocate these airstrips to suit both plane and truck access, because the best positions were picked and built on many years ago;
- (f) the single most idiosyncratic feature of the eastern route was the site of Hobbiton, on the Alexander property in Buckland Road which featured in the "Lord of the Rings" movie trilogy. Since the release of the movie, the owner has built a successful tour business offering visitors the opportunity to see the remnants of the Hobbiton village set, and the surrounding countryside of the "Shire". This attraction is the basis for a substantial development plan. Future development possibilities include the filming of portions of "The Hobbit" movie should this be made;
- (g) south of the Waikato River at Karapiro, the western route runs close to the Maungatautari Ecological Island project, a multi-million dollar community investment supported by a wide range of stakeholder

groups. To remain financially viable in the long term the Ecological Island project needs to attract 100,000 paying visitors per year. It was suggested by Waipa District Council in a submission to Transpower dated 4 April 2005 that the route option will have "*an indirect visual effect on the visitor and education centres and views available of the surrounding area from within the forest itself*" and thus "*has the potential to detract from the overall visitor experience at the Ecological Island.*" It was also contended that Waipa's natural heritage was already compromised by the existing ARI-PAK A line. Waipa District Council asserted that the prospect of the larger 400 kV lines would exacerbate this effect on the natural heritage, to the point where Transpower infrastructure would visually dominate certain vistas of the landscape. The Council further asserted that iconic heritage sites such as Lake Arapuni, Lake Karapiro and Mount Maungatautari would be compromised beyond repair.

72. SUBMISSIONS on the interim decision were received from 405 individuals and organisations. These submissions canvassed the full range of issues raised at earlier stages in the consultation, and posed challenges to the interim decision to select the western route. A significant number of issues were also raised about individual properties. The latter were not of sufficient weight to change the choice of route outright. However, they were useful in developing an indicative centreline for the easement stage of the consultation on the overhead section as they identified or confirmed specific features which it would be desirable to avoid.

73. ALMOST 20% of the topics raised in the submissions on the interim decision discussed alternatives to the Original Proposal. Some 40% of these topics (8% of the total) related to non-transmission alternatives. There was also considerable concern expressed about other aspects of the institutional environment in addition to the perceived effects of restructuring. Key themes amongst these comments were:

- (a) the limitation of compensation to the easement only;
- (b) Transpower's powers under the Public Works Act; and

- (c) what were perceived as attempts to change the "rules", such as the RMA, or ignore rules that apply to landowners, such as District Plan provisions.

74. THE response of the landowners in the consultation on the overhead section between July 2005 and January 2007 took four forms:

- (a) preparedness of many landowners to meet Transpower staff to discuss the indicative centre-line. These meetings were often under the cover of a "*no prejudice*" statement, and sometimes off-site rather than on the property;
- (b) a willingness of some landowners to meet Transpower, mainly with a view to revisiting route-related decisions, rather than discussing the indicative centre-line;
- (c) refusal to engage with Transpower. A common basis for this refusal was a preference to wait for the release of the final decision of the Electricity Commission which, at the time, was anticipated in June 2006, before talking to Transpower; and
- (d) appointment of agents to speak to Transpower on behalf of landowners.

75. INFORMATION gained during the consultation and the parallel environmental and engineering studies was fed back into the ongoing design process at Transpower.

76. IN marked contrast to the overhead section, the consultation on the underground cable section from the transition station near Ormiston Road to the Otahuhu Substation undertaken in August to October 2005 was, in my view, largely uncontentious. The only exceptions were where the proposed route left the public roadway and crossed private land between Ormiston Road and Jeffs Road. Transpower sought community input on the choice between two sub-options between East Tamaki Road and Stancombe Road. One of these, through an existing open space and stormwater management area, received overwhelming support.

77. **THE** proposed transition station site on a property in Ormiston Road, Whitford created considerable interaction with the affected landowners, Frank and Catherine Tuck, starting in November 2004 and continuing to March 2007. A wide range of matters were canvassed, including environmental and lifestyle impacts, and planning issues and the impact on the development potential of the property. In contrast, the substation proposals at Otahuhu and Whakamaru generated minimal response from adjoining landowners or surrounding communities with the principal exception of one landowner at the south end of the overhead section.
78. **COMMUNITY** feedback during the consultation on the proposal to upgrade the Pakuranga Substation from 110 kV to 220 kV in October to December 2006 was modest. Only four submissions were received. There were a range of enquiries made at the drop-in centre canvassing issues such as construction traffic, noise from the substation, the existing overhead lines, and the cable routes. The proposal was also discussed with the Botany Community Board who formally supported the "*revised upgrade scheme*". The submissions raised concerns about loss of property value, health issues related to the potential effects of EMFs, and the visual impacts of both the substation technologies under consideration for the Upgrade Project.
79. I consider that Transpower has engaged intensively with landowners in the immediate vicinity of the proposed transition station/substation at Brownhill Road starting immediately from the announcement of the Amended Proposal in October 2006. I was appointed as the case manager for the seven properties in upper Brownhill Road which overlook the Transpower property at 149 Brownhill Road. In this role I received and met regular requests for information and I facilitated meetings between the residents and Transpower staff and consultants on five occasions between November 2006 and April 2007 in the residents' homes. Transpower has provided this group of residents with geotechnical information about the site and had visual simulations of the substation prepared. The latter are being updated at the time this evidence is being prepared in mid January 2008 as Transpower seeks to further mitigate the effects of the transition station/substation by the design of a low level intermediate structure between the Tower 5 and the interconnection with the cable to the Pakuranga Substation. It has also initiated discussion on mitigation planting.

80. **THIS** consultation resulted in wide-ranging feedback which included:

- (a) strong advocacy by both the local residents and the Manukau City Council of the alternative site in an industrial/commercial area on East Tamaki Road, as well as other site/route options;
- (b) specifying various features of the site and its situation that were considered to make the location unsuitable for a substation including geotechnical conditions, the presence of hot water and future urban development in the area; and
- (c) identification of a range of environmental, economic and social effects including (but not limited to):
 - (i) construction issues related to water supplies and Brownhill Road;
 - (ii) development constraints, loss of potential tourism development based on thermal waters;
 - (iii) two fault lines through the site;
 - (iv) flooding of Brownhill Road;
 - (v) noise;
 - (vi) visual intrusion;
 - (vii) personal safety on, and rural amenity of, Brownhill Road; and
 - (viii) personal stress.

81. **WHILE** the residents were opposed to a transition station/substation at 149 Brownhill Road, they assisted in refining the proposal for a substation if one were to proceed and were strong advocates of the use of GIS, which would enable the facility to be largely contained in a building. Following these consultations Transpower has now committed to the construction of a GIS

substation at Brownhill Road and to work with the residents to further mitigate the effects of the termination of the line and the substation.

82. **COMMUNITY** feedback in the consultation on the cable route options from Brownhill Road to the Pakuranga Substation was modest with six submissions received. The topics addressed in the submissions were route selection, construction issues, what was perceived as an abuse of rights, development planning, easement, ecology/environment, and economic effects. Local knowledge of submitters identified issues with all three route options including potential issues with utilities in Smales Road and the proximity of the western route to the gas line at the edge of the Greenmount Landfill property. Landowners in the section near the Brownhill Road substation were concerned about the impact of the proposal on the development potential for their properties.
83. **THE** consultation on the sub-option running along Brownhill Road - Whitford Park Road - Sandstone Road to Caldwell's Road raised concerns about the impact on Brownhill Road and the subsequent reinstatement of the road. The principal changes proposed to Brownhill Road would be the result of the upgrading needed to be able to transport heavy equipment to the substation site. The main impact of cable installation on the road would be in terms of bringing the works forward to about 2009. The consultation did not identify any significant additional effects in this alternative, which provides greater security of supply, than putting all the cables on a single route through Regis Park and the Redoubt Road extension. The principal short-term disruptions to the use and amenity of Brownhill Road would be similar with or without the cable route as the road would need to be modified to enable the transformers to be transported to the site when the line is energised at 400 kV. The main difference is in the timing and duration not the nature of the effect.

Transpower responses

84. **TRANSPower** has responded to the inputs from the community through consultation in six main ways:
- (a) by systematically collating information to help build up detailed knowledge of the routes investigated and aspects of individual

properties that are significant in the design and construction of the proposed line;

- (b) by detailed investigations on individual properties to assess matters raised by landowners which could influence the choice of route and the alignment of the proposed line and the position of towers and substations;
- (c) by reviewing decisions made related to the design of the line prior to the consultation, including the choice of overhead 400 kV AC for the bulk of the proposed line and a range of alternatives;
- (d) by using the information gained through the consultation in ten specific decisions related to the design of the proposed line;
- (e) by developing detailed Site Works Plans which take into account matters raised by landowners related to access to tower sites and construction of towers to minimise effects on landowners; and
- (f) by using the information gained to develop mitigation plans for particular properties.

Information collation

85. **AS** discussed earlier, all the feedback from individuals, communities and other stakeholders and interested parties about the Upgrade Project, and all other contacts (including mailouts, phone conversations, meetings etc) was logged in the GridTracker database. This database has built up a significant knowledge base of information about the routes (including specific properties along the routes) which provided an input into the investigations and the route evaluations (including more detailed investigations of the final route).

Detailed investigations

86. **THE** GridTracker records were reviewed by Transpower and its consultants, including myself, to identify new information to add to that obtained in the earlier Area, Corridor and Routeⁱ stages of the Upgrade Project, when all the work on the project was undertaken by desktop research and by limited field investigation from public vantage points as explained in the evidence of Ms Allen. Community feedback was also used to identify instances where

further investigation was required. Follow-up actions were identified in most specialist areas, including archaeology, ecology, Maori issues, and engineering. The identification of these issues typically led to requests being made to landowners to undertake field inspections - requests that were granted in most cases. For example, I visited the property of Mr and Mrs Tuck at 609 Ormiston Road on 15 July 2005 with Simon Beale of MWH while he undertook an ecological assessment. Mr Druskovich will describe in his evidence sites he has visited to assess possible archaeological features. Transpower's field engineers also visited numerous properties to undertake engineering assessments related to site access and tower location.

Review of alternatives

87. I have discussed at some length the responses made by Transpower to the alternatives raised by the community including at paragraph 27 of this evidence. These reviews were undertaken even though the purpose of the consultation was on the choice of routes not the choice of technology. These reviews were complemented by the consultation and analysis undertaken by the Electricity Commission.

Use in decision making

88. **THE** information gathered through the consultation was used in the following decisions taken in the Routeⁱⁱ and Easement stages of the Upgrade Project covered by the consultation:
- (a) deciding between the eastern and western routes for the overhead section from Whakamaru to South Auckland;
 - (b) developing an indicative centre-line and preliminary tower locations for the overhead section;
 - (c) finalising the centre-line and tower locations for the overhead section;
 - (d) identifying a site for the transition station under the Original Proposal;
 - (e) assessing possible effects of the preferred cable route to Otahuhu;
 - (f) deciding between two sub-options on the cable route to Otahuhu;

- (g) selecting the technology for the Pakuranga substation upgrade to 220kV;
- (h) selecting the cable route from Pakuranga to Brownhill Road from three options and two sets of sub-options;
- (i) selecting the preferred technology for the Brownhill Road substation; and
- (j) selecting the preferred position on the site for the Brownhill Road transition station/substation.

89. **BETWEEN** July and November 2006, information gained during the interactions with landowners and occupants and the environmental and engineering studies that were undertaken in parallel was fed back into the ongoing line design process. Regular meetings of the Indicative Centreline Group were held to consider new information and to evaluate possible design responses. The meetings involved Transpower engineers, property experts and environmental managers, consultant planners, landscape architects, and other specialist advisors, as required. Using these inputs, various adjustments were made to the indicative centre-line which resulted in over two thirds of the towers being moved from their preliminary locations. Examples of tower movements are given in the evidence of Mr Roy Noble.

90. **AS** noted earlier, the Amended Proposal lodged on 24 October 2006 included provision for an eventual substation with AIS on the Brownhill Road property. The preliminary design was for a site 370 metres long and up to 110 metres wide. The residents advocated the use of GIS which would largely be contained in a building and would have a much smaller footprint. Following a series of meetings held in the landowners' homes, and specialist studies on the geotechnical conditions of the site and potential noise from the substation, Transpower resolved to build a GIS substation instead. Preliminary work has been undertaken on mitigation planting for the site following the investigation of three different positions on the site at 149 Brownhill Road for the substation. As noted earlier, work is underway at the time of writing to determine how best the overhead section can be linked to the transition station through the use of

an intermediary structure with a view to minimising the visual effect of the towers.

Site Works Plans and Mitigation Plans

91. **CONSULTATION** is continuing with landowners who have the easement across their properties. Discussions with landowners are adding to the baseline information gathered in the earlier phases to provide an input into the preparation of Site Works Plans. These Plans, which identify the works to be carried out on the property, and all issues associated with working on the property, are discussed in the evidence of Mr Patrick.
92. **THE** results of the consultation are also providing a starting point for further consultation with landowners on mitigation plans. I am aware that in mid-January 2008 about eight visual mitigation plans are being prepared by Mr Lister.

ISSUES RAISED IN SUBMISSIONS

93. **MY** colleague Dr Tom Ludvigson and I have reviewed all the submissions made to the Board of Inquiry. We identified 70 instances of consultation being discussed by a total of 50 households or organisations, including three related to the time available for submission to the Board. Most of the comments were quite focussed, unlike some of the submissions in the earlier phases of the project which challenged Transpower's commitment to consultation. A handful of submitters including Mr Geoff Copstick (Submission No. 0405) who referred to a *"lack of good faith"* and *"arrogance"* on Transpower's part, Mr Marshall Gray (Submission No. 0794) who asserted that *"Transpower should listen to the people instead of riding roughshod over everyone in their way"*, and Mr Colin McKenzie (Submission No. 0855) who referred to *"this one-sided and high handed 'consultation' process"*, however, continued to make generalised criticisms.
94. **WHEN** analysing the submissions I noted that the consultation was not a topic raised in the 788 pro-forma submissions. It was added as a topic in 19 of the 126 submissions which included extra comments on the proforma submission (including those from Messrs Copstick and Gray).

95. A number of the submissions related to the processes used in the consultation and asserted deficiencies in the information available. There are, for instance, 16 instances where the consultation was criticised because Transpower did not provide a set of illustrations for part of the line or the whole length of the line showing the towers in place. I consider this criticism to have little merit as there are an infinite number of potential perspectives from which drawings might be made along the 186 km of the overhead section. Transpower had a much more effective process for dealing with this issue on a case by case basis with individual landowners. The laptop computers used by the field engineers who visited properties to discuss the project on request from landowners had a program which could simulate the towers in a view from any point suggested by the landowner.
96. A second theme in the submissions was that Transpower had failed to listen to the inputs made by local communities. This assertion is made, for instance, by Mr Steve Rigby (Submission No. 0664) from Hunua, and Mr Graham Smith (Submission No. 0699) from rural Te Kauwhata. In both these instances the local communities were advocating alignments outside the original 500 metre wide routes which were carefully identified through the ACRE process. In the case of the Hunua community there was strong advocacy for running the route through the Hunua Regional Park.

Issues raised by Dr Laura Bennet and Mr Adrian Kinsler (Submission numbers 1085 and 1091)

97. DR Bennet raises issues in relation to consultation. Mr Kinsler's submission is separate but identical to Dr Bennet's submission. They submit that:
- (a) the community affected by the 400 kV capable line was not consulted about transmission options;
 - (b) there were no public workshops to allow public input; and
 - (c) the line was decided without public consultation.
98. **IN** my opinion, communities along the route of the new transmission line have been consulted on transmission options through the parallel consultations by Transpower and the Electricity Commission. I will discuss the Transpower

process first and then comment on inputs to the Electricity Commission consultation.

99. **AS** I described earlier, the purpose of Transpower's consultation was to determine the most appropriate route and easement for the new transmission line and there was extensive consultation on this matter. Nonetheless I reported to Transpower as early as 18 November 2004 that criticism was levelled at the proposed use of 400 kV AC technology and that a range of transmission alternatives were suggested at the Open Days held in the previous weeks.
100. **WHILE** not the purpose of the consultation, Transpower commissioned a range of studies to review the proposed use of 400 kV AC, as mentioned earlier in my evidence. This included reports on HVDC and more extensive undergrounding. These reports were all made available on the project website and open for public comment. Following these reviews, the choice of 400 kV AC was confirmed.
101. **MY** records show clearly that transmission options were discussed at Transpower's initial open days and that they have been repeatedly raised in subsequent meetings, correspondence and phone calls. While not in a workshop format, the open days, public meetings and later drop-in sessions provided ample opportunity for issues on transmission options to be raised. These issues were also widely canvassed in the submissions received by Transpower. In the submissions on the Interim Route decision, for instance, there were 201 comments on transmission alternatives (including 44 on HVDC) and 202 on non-transmission alternatives. I have also noted in paragraph 31 of my evidence earlier the meeting between senior Transpower engineers and representatives of HALT to discuss technical issues including HVDC.
102. **IN** parallel to its consultation on the transmission line under the RMA, Transpower was also required to seek investment approval from the Electricity Commission. The Electricity Commission's decisions on the Original and Amended investment proposals were informed by extensive consultation with affected and interested parties. This included meetings in various locations along the line, public submissions, and Public Hearings on a notice of intention to approve the Amended Proposal. The choice of transmission option was

extensively canvassed during this process with significant opportunities for public input. In the course of this consultation the Commission published a substantial review entitled *"Alternatives to Transpower's proposed Whakamaru-Otahuhu 400kV transmission line: alternatives analysis stage II"* in December 2005.

- 103.** **THERE** are no submissions from Dr Bennet or Mr Kinsler on the Electricity Commission's website for either the Amended Proposal or the Notice of Intention to Approve the Amended Proposal when these technology issues (including the choice of 400 kV AC) were carefully considered. Dr Bennet did make a submission to the Electricity Commission on 24 May 2007 on behalf of New Era Energy advocating the "upgrading of current lines". This option was considered and rejected by the Electricity Commission.
- 104.** I also heard Dr Bennet make a presentation to the Electricity Commission's Public Hearing in Auckland on 24 May 2007. Her presentation discussed the proposed national policy statement on electricity transmission and her views on EMFs and health. The latter are addressed in the evidence of Dr Black. Notwithstanding the wide-ranging arguments about alternative transmission and non-transmission solutions presented to it by Dr Bennet and many others, the Electricity Commission approved the investment in the Amended Proposal on 5 July 2007.
- 105.** **IN** my opinion there were ample opportunities to make an input into decisions on the transmission options during both the Transpower and Electricity Commission consultations and many people did so. I therefore reject the notion that the line was decided without public consultation. Both processes simply came to a different conclusion to the one sought by Dr Bennet and Mr Kinsler after careful consideration of the evidence.

Issues raised by Roger Everson (Submission No. 0429)

- 106.** **MR** Everson's submission relates to the NORs in Manukau City. He submits that he was not consulted. He seeks that he be consulted given the proximity of his property to the proposed line.
- 107.** **MR** Everson begins his submission with the assertion that his property is within 300 metres of the new transmission line. This is incorrect. It is

approximately 450 metres from the edge of the easement to the nearest point on his property and approximately 530 metres from the centre-line to his dwelling. The distance is significant as it meant that Mr Everson's property is entirely outside the 500 metre wide route used in the investigations.

- 108.** **MR** Everson received the initial communications from Transpower about the project with the mail-outs of 27 October 2004 (Newsletter 1), 10 February 2005 (invitation to progress meeting), and 16 February 2005 (Newsletter 2). These documents were circulated to owners and occupiers outside the two routes under investigation to ensure that people in the wider area who might have an interest in the project were notified.
- 109.** I can find no record of his contacting Transpower during the entire period of the consultation on the overhead line nor of him attending the initial open days or progress meeting in Hunua. As his property was outside the investigation area and he did not make a request to be put on the mailing list, he did not receive any of the subsequent bulk mailings. In my view, Transpower took all reasonable steps to inform Mr Everson consistent with the distance of his property from the line. It could not respond to any issues given that Mr Everson did not express any interest in the project at that stage. Other people in a similar situation to Mr Everson living outside the route did choose to contact Transpower and have continued to receive the project correspondence.
- 110.** **THE** database records show that Mr Everson first contacted Transpower on 12 February 2007 requesting that he be called by his case manager. This was done on the following day, 13 February 2007. Records of the conversation show that Mr Everson was concerned with the potential impact of Towers 31 and 32 on the view to the west. He was advised at that stage that the position of the towers had been fixed with the new transmission line about 80 metres closer to the Everson property than the existing ARI-PAK A line. A copy of the plan of the Kauri Farm property illustrating the position of the towers and easement in the vicinity of Mr Everson's property was sent by email on 13 February 2007.
- 111.** **MR** Everson also expressed an interest in possible boundary changes between his property and the adjoining Kauri Farm property during the phone conversation. The email of 13 February 2007 also contained an invitation to

contact Transpower to discuss the possibility of boundary adjustments which were raised in the telephone conversation on 12 February 2007. Mr Everson emailed Transpower on 19 February with an attachment indicating the areas in which he and his wife were interested but this proved to be illegible and a cadastral map was sent to Mr Everson following a conversation on the 21 February 2007.

112. CONTACTS between Transpower and Mr Everson have continued since and have included a site visit by the Transpower case manager in August 2007. Mr Everson's email of 20 August 2007 expresses appreciation of the visit. The last contact from Mr Everson was on 1 October 2007. I understand that no decision has yet been made on Mr Everson's proposal. The proposed boundary adjustments have no bearing on the project and need to be carefully considered in the context of the determining the most advantageous disposal of the Kauri Farms property.

113. IN my opinion Mr Everson was informed about the proposal and given adequate opportunity to express his views. Even though he chose not to seek further information on the project after February 2005, the progress of the project has been a matter of public record and considerable local interest in the area in which Mr Everson lives. Once Mr Everson contacted Transpower about possible boundary changes he received a prompt response. The boundary adjustments he seeks are not material to the project, unlike property purchase and disposal in other locations.

Issues raised by Franklin District Council (Submission No. 1048)

114. FRANKLIN District Council's submission relates to the Upgrade Project in its entirety. The Council submits that alternatives must be subject to a consultation process that enables the Franklin community to make a meaningful contribution to decision-making. In section 1.1 it asserts that "*alternative technical options have not been explored*". In section 1.2 it identifies a range of options including reconductoring of what it asserts are "*existing under-capacity lines in the Auckland Region*"; a longer length of undergrounding; the use of 220 kV; and alternative tower designs and conductors.

- 115. THE** Council's submission is in some respects similar to that of Dr Bennet which I discussed earlier in the implication that the treatment of alternatives has been inadequate. I have outlined already the extensive review of alternatives undertaken by Transpower and the Electricity Commission. In terms of opportunities to make a contribution the Council was also able to advocate for the Franklin community and its preferred options through both the Mayors/Chairs Forum and the Officers Forum. I have reviewed the records of attendance of the Mayors/Chairs Forum and have determined that the Mayor Mark Ball and the then Chief Executive Philippa Wilson attended a number, but not all, of these meetings. Both, for example, attended the meeting of 22 November 2006 in Hamilton when the choice of tower design and height was discussed. The evaluation of the leading alternatives to the Transpower proposal was also discussed in a presentation to the Mayors/Chairs Forum by Mervyn English, the general manager of the Electricity Commission in March 2007.
- 116.** I have previously mentioned that many submitters to Transpower used this opportunity to raise issues related to both transmission and non-transmission alternatives. I can find no record of Franklin District Council making a submission to Transpower during the consultation, although seven other district and city councils and two regional councils did. I can similarly find no record of a submission from Franklin District Council to the Electricity Commission on the draft decision. I am aware that the Council made a submission to the Electricity Commission on 29 March 2007 which acknowledged that a range of alternatives had been considered but took issue with the way they had been treated in relation to the Grid Investment Test. I also heard Mayor Mark Ball make a presentation to the Electricity Commission's public hearing in Auckland on 24 May 2007.
- 117. AS** I stated earlier, in my opinion there were ample opportunities for affected and interested parties, including the community of Franklin, to make an input into decisions on the transmission options during both the Transpower and Electricity Commission consultations. Many people did so, including residents of Franklin District either as individuals or through groups such as HALT and the Paparimu Residents and Ratepayers Association. The Council also had ample opportunity to advocate for its community including the specially convened fora for elected representatives and officials but (unlike other

Councils) it only appears to have made a formal submission in the final stage of the Electricity Commission process.

Issues raised by Marie Morgan Trust Incorporated (Submission No. 0987)

- 118. MARIE** Morgan Trust Incorporated raises issues in relation to consultation. Its submission relates to the Otahuhu to Brownhill underground cable NOR. The Trust submits that there has been no consultation concerning the underground cable to be laid down the centre of Jeffs Road in approximately 15 years time when the area will be fully developed.
- 119.** I have reviewed the GridTracker records for the property at 189 Jeffs Road which records correspondence with two parties, first the Trustees of Conquer Trust (JD & CM & ND Conquer and Morgan and Hanley) and second, Marie Geraldine Morgan. Both parties were sent the mailout to affected and interested parties along the underground cable route on 25 August 2005. Both the Conquer Trust and Ms Morgan were later sent the route confirmation letter and second cable route newsletter on 24 November 2005. The project was also covered in the local media at the time of the announcement and for the consultation period.
- 120. THE** documents sent out on the 25 August 2005 were:
- (a) the announcement letter, the first underground cable newsletter;
 - (b) two information sheets entitled "*400 kV underground section*" and "*Traffic management during construction of the 400 kV Underground Cable Section*"; and
 - (c) a "*Have Your Say Form*" for making a submission.
- 121. ALONG** with details of the proposed underground cable and the route options, the newsletter provided a range of information which would have been of direct relevance to the Trustees and Ms Morgan including:
- (a) a map which showed the portion of Jeffs Road included in the route;

- (b) details of opportunities to discuss the proposal at two local libraries in Otara (six days per week for three weeks during the day and evening);
- (c) the freephone number of the telephone call centre;
- (d) the URL for the project website; and
- (e) an invitation to telephone Transpower to arrange a meeting.

122. GIVEN that none of the mail was returned from either of the two addresses used (one being a post office box) I can only infer that this submitter was notified of the works and had the opportunity to engage. I therefore conclude that the statement *"No real consultation has taken place with us as Affected Parties to date"* is not accurate. These parties were given the opportunity to take part in the consultation but the record shows that they did not take it. In my opinion this submission falls into the category where a person consulted has been given both the time and the opportunity to state their views, and who therefore cannot complain later if they then fail to take the opportunity to do so.

123. IN terms of the interests of Ms Morgan and the Conquer Trust, it is worth noting that the property is on the northward-running limb of Jeffs Road and does not front onto the cable route. In practice, the disruption from the very substantial (and on-going) residential construction in the area would, in my view, be much more than that anticipated when the cables are installed along 650 metres of Jeffs Road.

Issues raised by Jill and Marinus Van Het Bolscher (Submission No. 0810)

124. MR and Mrs Van Het Bolscher's submission relates to the Manukau Overhead line NOR and the Otahuhu to Brownhill underground cable NOR. Mr and Mrs Van Het Bolscher acknowledge that they have been actively involved in the public consultation for a number of years. Indeed the GridTracker database records 77 events (outgoing and incoming) with Jill and Marinus Van Het Bolscher since the first mailout on 28 October 2004. They assert, however, that *"Consultation has all too frequently been rather meaningless."*

125. **MR** and Mrs Van Het Bolscher make specific mention in their submission of advice received in July 2005. This was the announcement of the final decision on the preferred route from Whakamaru to Ormiston Road for the overhead line. Mr and Mrs Van Het Bolscher were informed at that stage that the overhead line would not cross their property. In practice, their property at 568 Ormiston Road, East Tamaki was only ever on the outer margins of the route of the overhead line and I do not believe at any stage there was any intention to locate the transition station between the overhead and underground sections to the west of Ormiston Road.
126. **CONSULTATION** with Mr and Mrs Van Het Bolscher resumed on 25 August when the proposed underground cable route to the Otahuhu substation was announced as this crosses the Van Het Bolscher property and that of Mr Kenneth Smith at 542 Ormiston Road. Mr and Mrs Van Het Bolscher have sought since then to minimise or eliminate the portion of the cable route on their property. Their objections have included the impact of the easement for the cable on the development potential of their property and, particularly in the case of Mrs Jill Van Het Bolscher, the potential health effects of the underground cable.
127. **TRANSPower** records of a meeting on 24 July 2007 include discussion of a site inspection in which it is reported that Mr Van Het Bolscher measured out the area of the proposed designation and advised that the two proposed building sites were on a knoll on the property at the top of the hill and were unlikely to encroach into the current proposed designation area. The notes of the same meeting by R Jon Maplesden, a consultant to Mr and Mrs Van Het Bolscher in contrast recorded *"An exterior walkover followed, and it was evident that an admirable building site or two are available, away from the existing house, and the designation is clearly detrimental to this."* There are no plans, however, to support the assertion of how the section or sections would be affected by the 15 metre wide easement.
128. **THROUGHOUT** the consultation Mr and Mrs Van Het Bolscher have commented that they found the process stressful and they have made it clear on a number of occasions that they expect compensation for this stress. The timing of the July and August 2005 announcements contributed to the situation as Mr Van Het Bolscher took an overseas trip in August 2005 secure in the knowledge that their property was unaffected by the overhead line only to find

out while away that it was crossed by the proposed cable route to the Otahuhu substation. This has indeed been a protracted process but it has been conditioned in part by the scale and complexity of the project and the changing context (including the failure at Transpower's Otahuhu substation on June 12 which highlighted the importance of connections at the Otahuhu substation and diversity of supply into Auckland). Another factor has been that Transpower has also been in consultation with the Van Het Bolscher's neighbour Mr Kenneth Smith over possible property acquisition and the value of compensation related to the purchase of an easement, making it impossible to expedite the case of Mr and Mrs Van Het Bolscher in isolation. Having been involved in the consultation with Mr and Mrs Van Het Bolscher at one stage and having reviewed the case notes for the subsequent period, I consider Transpower to have made the best endeavours in the circumstances.

Issues raised by Beverley June Seales (Submission No. 0247)

- 129.** **MRS** Seales raises issues regarding Transpower's dealings with the public. Her submission relates to all NORs and resource consent applications. Mrs Seales raises concerns alleging three years of:
- (a) unanswered questions;
 - (b) ignored phone calls requesting information; and
 - (c) bullying tactics employed by Transpower and its agents.
- 130.** I have reviewed the record of interactions with Mr and Mrs Seales which amount to 62 events in relation to six different properties between October 2004 and January 2008 with the bulk (52) related to the farm at 340 Hangawera Road, Morrinsville. The database requires entry of a range of information which enables events like an incoming phone call to be tracked from initial receipt to completion.
- 131.** **IN** terms of the assertion of "*unanswered questions*" I was able to identify an issue of compensation as one where the Seales have sought to get a figure from Transpower for some time. The issue of compensation was first raised on 8 November 2004 when the Seales attended the Open Day at Morrinsville. It has been discussed at various stages during the period. A decision by

Mr and Mrs Seales not to discuss the easement process until the Electricity Commission decided on the proposal, advised to Transpower in a phone conversation on 17 March 2006, contributed to the time taken. Ultimately this matter can only be resolved through the valuation process described in the evidence of Mr Miles. In terms of other issues raised by Mrs Seales during the consultation, her submission on the Interim Decision raised a wide range of issues. These include, landscape, physical resources, health, safety and security, amenity values, economic effects, and personal issues. All these matters have been addressed in the various project reports and other publications. The specifics of the Seales' case have been discussed during visits to the property by the Case Manager, Mr Robert McBurney, engineers and a planner.

- 132.** I can find no record of Transpower failing to make a response to an incoming phone call. There is some evidence of Transpower not making direct contact and leaving messages on an answer phone but none of total non-response. For instance, between 14 September 2007 and 29 November 2007 there were eight incoming phone calls with ten outgoing calls in response. It was only the latest one where a response was delayed as recorded in the call notes of 23 January 2008 as follows:

"I called Mr Seales and apologised for not having my responses to his series of questions out to him. He said that is ok, he figured I would have trouble producing the responses over the holiday period. I said I thought I would be able to do it in time, but I was off sick last week. I said I expect to be able to get it to him at the end of this week. He said that would be ok. ... Mr Seales said, ok, you get the letter to me as soon as you can, call me the week after and we shall see if it is worth getting together. I said I would do that."

- 133.** **ON** the basis of records contained in GridTracker I am unable to identify any instances that could support the allegation of *"bullying tactics by Transpower and its agents"* in relation to Mr and Mrs Seales. The tenor of the conversations recorded in GridTracker appear to be positive on both sides. For example, the Case Manager records a phone conversation on 9 January 2005 as *"Spoke with Mr Seales. He said that there are a couple of meetings coming up that he wants to attend and get info. from before meeting us at his place. He said he had heard from Mr Gibson (CR 92027) that we (the engineer*

and me) are reasonable people. He said the meetings coming up are between the people potentially affected and the politicians. I offered to call back after those meetings, but he said make it after the election and I will know more." My interpretation of the use of the word "bullying" is that it most probably refers to the perception of Transpower, as a network operator, being able to resort to the Public Works Act for property purchase and its powers under various other legislation. I believe that it is more of an institutional issue than one related to the consultation *per se*.

134. **ON** balance, while Mr and Mrs Seales have remained steadfast opponents of the proposed line since the very outset, I can find no evidence that this has affected the manner in which they have been treated in the consultation, which has been respectful at all times, or of the specific assertions that they make against the consultation process.

Issues raised by Federated Farmers (Submission No. 1060)

135. **FEDERATED FARMERS'** submission relates to the Upgrade Project in its entirety. Federated Farmers acknowledges:

- (a) *"The extensive amount of consultation undertaken by Transpower in relation to the Proposal is acknowledged, including that with Federated Farmers" (p14); and*
- (b) *"it is apparent from the documentation that Transpower, has apprised itself of the requirements of the law"*

but submits that Transpower *"has set about meeting the requirements of consultation in a circumscribed manner."*

136. I have carefully considered these statements and find the specifics of the allegation somewhat difficult to reconcile with the term "circumscribed" as it states that *"The focus of the consultation has been on the broader issue of whether or not the lines should be in a particular location, rather than on the detail of the relationship between Transpower and the landowners across whose land the lines are proposed to pass."*

137. **THE** term "*circumscribed*", in my opinion, is entirely inappropriate for this consultation. I have previously discussed the range of issues covered in the consultation which has canvassed environmental, economic, engineering, social and cultural matters. The consultation performed a critical role in the Route (ii) and Easement phases of the ACRE process designed to identify the best alignment for the proposed transmission line, but canvassed the full gamut of technological options and a wide range of other topics during the process. In my opinion, to focus on the detail of the relationship between Transpower and the landowners would have been excessively narrow and entirely inappropriate.
138. **IN** practice, the wide-ranging coverage of the consultation included aspects of the relationship between Transpower and landowners in two ways:
- (a) a range of issues were canvassed with landowners through the public meetings, personal meetings, telephone calls and correspondence. These matters included compensation for transmission lines crossing properties, and the alleged misdemeanours of Transpower's line maintenance contractors; and
 - (b) Federated Farmers was specifically identified as a key stakeholder in the consultation plan as a representative of many of the landowners on the route and direct consultations were held with both the Head Office and Regional Offices (principally Auckland) by senior Transpower personnel.
139. **ONE** of the key issues in the direct consultations with landowners and with Federated Farmers was the form of payment made to landowners for an easement. The landowners addressing this issue and Federated Farmers advocated a rental agreement whereas the existing policy is for a lump sum payment. On 22 June 2005 Federated Farmers wrote to Transpower reporting the outcomes of a meeting held on 1 June 2005 attended by Federated Farmers (Auckland and Waikato Provinces), New Era Energy, two property valuers along with Mr Paul Cassin and Mr Mark McKinley of Land Compensation Consultants Limited. As one of the outcomes of the meeting the parties resolved to seek a model agreement preferably consisting of:

- (a) *"A reviewable arrangement for payment for the property right, including an indexed annual rental if that is the landowners chosen method, securing access to and use of the land;*
- (b) *A one off compensation payment for injurious effect caused by the presence of the transmission line associated with both upgrade and new lines; and*
- (c) *Compensation for the disturbance that occurs during construction of the line."*

140. THE letter also stated that

"The agreement and protocol needs to be appropriate for both:

- (a) *New lines; and*
- (b) *Existing lines and upgrades.*

The meeting was firmly of the view that until agreement in principle as to the basis of landowner remuneration is reached and a protocol has been agreed with Transpower, land owners will be advised not to enter into any form of agreement with any party for access onto their property for any investigation or any works relating to the transmission lines both in terms of upgrade or new line construction.

The meeting agreed that it is important to continue to explore a solution whereby the requirements of both parties can be discussed and common ground agreed."

141. IN the ensuing consultation with Federated Farmers and with landowners Transpower carefully considered the proposed concept of a rental agreement but ultimately decided that the existing system of lump sum payments was superior. The response was relayed through meetings, correspondence and in the project newsletters. The more general issues related to transmission lines crossing private land were addressed in an infosheet entitled "Property Matters".

142. **REPRESENTATIVES** of Federated Farmers have not accepted the outcome of the consultation. The submission asserts that *"Transpower has approached its consultation obligations on matters of detail such as issues related to compensation for land owners for the use of their land, potential land owner liability and the indemnification of land owners for losses that might be suffered arising from the proposed transmission lines, with a closed mind."* I note, however an email sent by Mr John Sexton of Federated Farmers Auckland to Mr Simon O'Rourke of the New Zealand Herald and copied to Paul Hutchinson MP and Dr Ralph Craven states that *"I made it clear to the Electricity Commission meeting in Auckland yesterday that we will not accept the current Transpower easement agreement and will not accept one off payments, they must be annual payments"*. It appears to me that Federated Farmers established a position prior to entering the consultation with Transpower from which they have not varied. Recognising that consultation is not negotiation, it would appear that both parties have firm views rather than Transpower simply being intransigent.
143. **IN** practice the detail of the relationship between Transpower and the landowners whose properties are crossed by a transmission line needs to be addressed at the national level rather than with the framework of an individual project where, as has been seen, this is one of many matters of concern. The more general issues are addressed in the Transpower publication *"Working on your land: A quick guide to your rights, obligations and how we will work with you"*. In terms of the complaints about contractors arising during the consultation these were individually followed up. As from 1 October 2006, Transpower became a member of the Electricity and Gas Complaints Commissioner Scheme. The scheme provides a process for certain complaints to be dealt with by the Commissioner, at no charge, if resolution of the complaint has not been achieved through Transpower's internal complaints process.
144. **IN** conclusion, it is my opinion that the criticism by Federated Farmers that the scope of the consultation has been inadequate is misplaced and it is my view that the consultation provided decision-makers with appropriate information on the decisions to be made during the development of the Upgrade Project. I consider that Federated Farmers' assertion that the focus of the consultation should be on the detail of the relationship between Transpower and the landowners across whose land the lines are proposed to pass would itself

have resulted in consultation that was inadequate for the scale and significance of the project.

CONCLUSIONS REGARDING CONSULTATION

- 145. THE** consultation on the Upgrade Proposal has been both extensive and lengthy. It has been complicated by the dual approval processes under the RMA and the Electricity Act, and the withdrawal of the Original Proposal made to the Electricity Commission following the draft decision to reject the proposal. The Amended Proposal triggered the need for further consultation processes. There have also been incidents, such as the burning of effigies in the main street at Tirau, where theatre for the benefit of the media has grabbed headlines. Interactions with some landowners have been fraught and a small number simply decided not to engage in the consultation at all. Overall, however, it has been a valuable process conducted with integrity by both Transpower and the affected and interested parties.
- 146. WHEN** I designed the consultation programme I was mindful of the Commitment to Consultation made by Transpower, the landmark Court decisions on consultation, and best practice both here and overseas. I have outlined in paragraph 16 how that programme was designed to meet seven outcomes.
- 147. IN** my opinion, each of the stated objectives has been met. That is not to say that there have not been complications along the way. For instance, the start of the consultation in the Te Hoe area was affected by a logistical problem which meant that 350 information packs were not distributed on time. While unfortunate in terms of communications, these teething problems were rapidly resolved. In the bigger picture of over three years of consultation covering in total in excess of 370 kilometres of route and thousands of interactions between Transpower and affected and interested parties, these issues were minor.
- 148. IN** my view the consultation has made a significant contribution to the final design of the project. The choice between the West and East routes was clearly a major decision in which the consultation information played an important role. Consultation by the experts on the project team (both

Transpower staff and consultants) has made a meaningful input into the easement phase and continues to this day.

PART B: SOCIAL IMPACTS

149. **IN** this part of my evidence I discuss the social impact assessment for the Upgrade Project.

150. **MY** colleagues Dr Tom Ludvigson (a social anthropologist), Mr Murray Ellis (a mathematician), and I prepared the social impact assessment of the proposed transmission line. Mr Ellis undertook a statistical analysis of the Census of Population and Dwellings data initially from 2001 and later from 2006 to describe the demographics of the communities.

151. **DR LUDVIGSON** and I undertook a qualitative analysis of the information supplied by individuals and community groups. Our main sources were:

- (a) notes from the Information Days, Progress Meetings, "Drop-in" sessions, and community meetings held as part of the consultation programme;
- (b) correspondence and records of phone calls between Transpower and the affected and interested parties recorded in the GridTracker database; and
- (c) the written and oral submissions made to Transpower on the overhead line, the cable routes, the transition station and the substations during the consultation from October 2004 to May 2007.

152. **THIS** material covers the period from October 2004 to May 2007. Dr Ludvigson also undertook a limited amount of fieldwork to explore specific issues interviewing local residents to follow up on health, education and real estate issues. Both Dr Ludvigson and I have had direct contact with individuals and community groups since October 2004 which has helped us understand the issues, and potential effects associated with the Upgrade Project.

- 153. THESE** analyses were complemented by research undertaken by Ms Penny Laurenson who is a planner with MWH. Ms Laurenson researched the effects of changes to transmission lines on school rolls, and the effects of the construction of cell phone towers on school rolls, in New Zealand. This research was undertaken to help interpret concerns raised by local communities in the consultation.

Scope of the assessment

- 154. MY** assessment of social impacts focuses on the direct and anticipated experiences of individuals, households, and communities in response to changes induced by the proposed line, underground cable routes and development at the substation sites. I will cover impacts derived from changes to one or more of the following:
- (a) people's health and well-being;
 - (b) their way of life;
 - (c) their expectations and aspirations;
 - (d) their culture; and
 - (e) their community.
- 155. A** number of topics which have a social aspect have been covered in other specialist studies notably:
- (a) archaeology: addressed in the evidence of Mr Druskovich;
 - (b) cultural values of Tangata Whenua: addressed in the evidence of Mr Mikaere and Mr Ngakete;
 - (c) district plan evaluation: addressed in the evidence of Ms Allen, Ms Hunter and Ms McGovern;
 - (d) landscape and visual: addressed in the evidence of Mr Lister and Mr Steven;

- (e) land use: addressed in the evidence of Ms Allan;
- (f) property: addressed in the evidence of Mr Miles; and
- (g) tourism: addressed in the evidence of Mr Bamford.

- 156.** IT is important to avoid the "double counting" of effects in the assessment of environmental effects (**AEE**) and evidence for the Upgrade Project. This was done in each case by excluding matters addressed by the other specialists from the social assessment. For example, people may value their view of native bush as part of their quality of life but the loss of an area of bush or a vista are dealt with in the assessments of the ecological and visual effects respectively.
- 157.** MY assessment also specifically excludes consideration of the relationship between electric and magnetic fields and health. These issues are covered in the evidence of Dr Black, Professor Elwood, Dr Wood and Dr van Rongen.
- 158.** THE full list of the topics considered in my assessment is set out in **Table 2** below.

Table 2 Social effects assessment framework	
(a)	<p>Health and wellbeing: where health is defined as <i>"a complete state of mental, physical and social wellbeing, not merely the absence of disease or infirmity"</i>.</p> <ul style="list-style-type: none"> (i) perceived quality of life, subjective well-being, self esteem; (ii) physical and mental health, including stress, depression, uncertainty; (iii) hazard exposure; (iv) perceptions about personal safety, risk/fear of crime; and (v) level of annoyances (dust, noise, strangers visiting properties).

(b)	<p>Way of life: how people, work, play and interact with one another on a day-to-day basis:</p> <ul style="list-style-type: none"> (i) patterns of daily living, including on-property leisure activities; (ii) home ownership, family structure, family stability; (iii) status or type of employment/unemployment, job opportunities; (iv) attitude and response to the project; (v) attitude to local community; (vi) participation in social networks; and (vii) rights over, and access to, resources.
(c)	<p>Expectations and aspirations: the future of their community, aspirations for the future and the future of their children:</p> <ul style="list-style-type: none"> (i) lifecycle-stage related plans and expectations.
(d)	<p>Culture: shared beliefs, customs, language and values:</p> <ul style="list-style-type: none"> (i) cultural values (non-Maori populations) including heritage and environment/biodiversity; (ii) cultural integrity (strength of local culture, traditions); and (iii) equity (economic, social, cultural).
(e)	<p>Community: its cohesion, stability, character, services and facilities:</p> <ul style="list-style-type: none"> (i) adequacy of community social infrastructure including health, welfare, education, policing and libraries; (ii) employment patterns and dependency rates; (iii) social tensions, divisions within the community; (iv) crime rates for personal injury and property loss; (v) demographic structure, relocation of individuals and families, influx of temporary workers; and (vi) capacity of local government, central government agencies, regulatory bodies and community organisations.

Stages of social effects

159. **THE** social effects of the Upgrade Project are described in three stages:

- (a) during project planning/consultation;
- (b) during implementation/construction; and
- (c) during operation (with its associated maintenance activities).

160. **SOCIAL** impact assessments of other projects sometimes also discuss a decommissioning phase. I do not consider it necessary to assess the potential effects of abandonment of the new transmission line, as the line, like most others around the country, is intended to be maintained indefinitely.

161. **THE** removal of extensive sections of the Arapuni to Pakuranga A (**ARI-PAK A**) line is the only aspect of the Upgrade Project which relates to decommissioning. This has two main implications in terms of social effects. The first is an equity issue related to the removal of the ARI-PAK A line north of Brookby and through the Hunua valley. This aspect of the Upgrade Project will create windfall gains for some landowners who will have the ARI-PAK A line removed from their properties while others, not far away, will now have a transmission line across their properties where they did not previously. The second set of effects will be associated with the work required to remove the ARI-PAK A line. I will address these effects when I discuss the construction effects.

162. **THE** nature and extent of social effects will unfold as the Upgrade Project proceeds through these stages and people respond to developments. These responses can vary greatly between individuals. Some people wanted to leave their properties when the Upgrade Project was first announced. Others may want to leave if, and when, the Upgrade Project has received all formal approvals. Others will accept and adapt to the Upgrade Project. Yet others may move into the area crossed by the transmission line to take advantage of perceived opportunities.

163. **RIGHT** now, it is only possible to comment with certainty on the effects during the planning stage. Transpower intends to undertake construction of the

Upgrade Project under an alliance contract. This means that there is no detailed information about the construction programme on which to assess potential effects on individual properties. I have, however, discussed the broad outline of the construction programme for the overhead line with Mr Peter Rasul and assessed the implications of the construction processes presented in the evidence of Mr Philip Patrick. I have discussed the construction programme for the cables and substations with Mr Steven Taylor. I have been able to reach some conclusions about the possible social effects of the construction programme on this basis.

- 164. OVERALL**, it is still too early at this stage to see how the Upgrade Project will affect individuals and their communities. Even the extent of effects that have been seen so far may have been muted by on-going doubts in the affected communities as to whether the proposed line would ever be built. These doubts/hopes were given some credence on 27th April 2006 when the Electricity Commission gave notice that it intended to decline Transpower's Original Proposal. This particular source of uncertainty was only removed on 5th July 2007, when the Electricity Commission granted investment approval for the staged implementation proposal, some two years and eight months after the Upgrade Project was announced.

Context of the assessment

- 165. MY** assessment was completed at the end of an extensive programme of project investigation, development and consultation known as the ACRE process, as described in the evidence of Mr Campbell, Mr Taylor and Ms Allen. The ACRE process is designed to avoid effects as far as practicable. It then seeks to minimise the remaining environmental, social, and cultural effects of implementing the preferred solution. Social aspects, such as settlement patterns, and cultural and heritage values were taken into account in all the assessments leading to the decisions on the preferred routes for the overhead lines, the cable routes and the substations. The effects on households living and working near the proposed line were also carefully considered in determining the final alignment. Where possible, this was done in consultation with the landowners.
- 166. ONE** indicator of the positive outcome of the ACRE process is that the construction of the proposed line would require the removal of only six

dwellingings and there would be no dwellingings within the easement along the 186 kilometres of the overhead line. The purchase of these easements and associated compensation will help address some of the effects on people on properties crossed by the line. Outright purchase of the whole property ends the immediate effects of the Upgrade Project for landowners selling to Transpower (although there is an on-going residual effect for the people involved as the result of the experience and the relocation). At the time this evidence was prepared in mid-January 2008, about 73 properties have been purchased outright, of which 65 were in the overhead section.

- 167. DESIGN** decisions have also had an impact on the nature and extent of the social effects. The Upgrade Project is quite unusual in that some of the most vulnerable groups will be subjected to the least intrusive technology, as the people who live in Otara are mostly affected by the installation of the underground cables. These effects are basically limited to the nuisances during the construction phase. The planning phase does not appear to have created any significant issues for people in this area. With the proposed line very largely buried in the roadways, there are unlikely to be any social effects during operation.
- 168. VARIOUS** other mitigation measures that I have outlined earlier in my evidence on Transpower's response to the consultation will also reduce the social effects. A case in point is the decision to build a GIS rather than AIS substation at Brownhill Road.

Community context

- 169. IN** this part of my evidence I describe the population along the route from north to south. I do this by dividing the line into six segments. These divisions are based on our statistical analysis of the Census meshblock data. The meshblock is the smallest geographic unit for which data can be obtained. They vary dramatically in size along the route reflecting the different densities of population in the urban and rural areas.

Table 3 SIA route segments related to transmission towers

Segment	Locations	Towers (approx)
A1	Otahuhu Substation to Brownhill Rd	Cable
A2	Pakuranga Substation to Brownhill Rd	Cable
B	Brownhill Substation site to North Mangatawhiri	5-72
C	North Mangatawhiri to Kiwitahi	72-245
D	Kiwitahi to Waotu	245-353
E	Waotu to Whakamaru	353-429

Segment A1

- 170.** **THIS** ten kilometre segment runs from the Otahuhu Substation in Otago through Flat Bush to upper Brownhill Road. In March 2006, the meshblocks crossed by the route contained 2892 people. The area is a mix of established low density housing which is mainly owned by Housing New Zealand in the west, and newly developing, higher density suburbs further east.
- 171.** **IN** 2006, the population was dominated by Pacific Peoples. Two thirds (1926 people, 66%) of the population living in this area were Pacific Peoples, compared with 7% nationally.
- 172.** **THIS** segment had the highest proportion in each of the five year age groups: 0-4 years, 5-9 years and 10-14 years. It had, by far, the lowest average personal income; lowest mean household income, lowest levels of home ownership; lowest levels of formal education; and lowest levels of English language speaking of any segment. An analysis by the Department of Public Health, University of Otago (Wellington) using data from the 2006 Census found that the Otago Census Area Units were in the top two percent of Census Area Units in the country in terms of relative deprivation.¹

¹ Salmond, S, P Crampton, J Atkinson, (August 2007), *NZDep2006 Index of Deprivation*, Department of Public Health, University of Otago, Wellington, p61.

Segment A2

173. **THIS** ten kilometre segment runs from the Pakuranga Substation past the Botany Town Centre, then through the suburb of Dannemora and on through an area of farms and lifestyle blocks to upper Brownhill Road.
174. **IN** March 2006 the meshblocks crossed by the route contained 3690 people. One of the distinctive features of this segment in 2006 was that it had by far the highest proportion of people of Asian ethnicity compared to any other segment on the route. Mean household income in 2006 was the second highest of any segment, some 35% higher than the national average. In 2006, people in this segment had been the most mobile in the previous five years with the lowest proportion number at the same address and the highest proportion who were overseas in 2001. It also had the highest proportion of people born overseas with 43%, which was almost double the national average.

Segment B

175. **THIS** 32 kilometre segment runs from the proposed Brownhill Substation site to North Mangatawhiri. In March 2006, the meshblocks crossed by the route contained 2148 people. It principally comprises a peri-urban mixture of lifestyle blocks and farms. In 2006, it had the highest proportion of home ownership by usual residents; the highest proportion of homes held in a family trust of the usual residents; the highest proportion of people living in the same residence as in 2001; the highest proportion of people aged 40-49 years; the highest proportion of people with a personal income of \$50,001 or more; and the lowest proportion of Maori ethnicity.

Segment C

176. **THIS** 60 kilometre segment runs from North Mangatawhiri to Kiwitahi. It is rural in character passing Maramarua, and a number of hamlets such as Waerenga, Te Hoe and Tauhei. In March 2006, the meshblocks crossed by the route contained 2088 people. The segment includes the western outskirts of Morrinsville and lifestyle blocks and farms both north and south of State Highway 26 (**SH26**). This segment was very similar to the other rural segments (segments D and E) in terms of mobility, with 38% in the same usual

residence as in 2001, and 49% usually resident elsewhere in New Zealand (both rates just above their respective national averages).

Segment D

177. THIS 62 kilometre segment runs from Kiwitahi to Waotu. This is a farming area with some smaller blocks of land in places, such as Te Hoe and Whitehall. In 2006, it had the highest level of European ethnicity of any of the segments, at 84%. This was 16% above the national average. On the other hand, it had the lowest proportion of Maori speakers of any segment.

Segment E

178. THIS 62 kilometre segment runs from Waotu to Whakamaru. For many years, it has largely been an area of plantation forestry with some farming at the northern end and around Whakamaru. Conversion from forestry to dairying is proceeding rapidly in the area. In 2006, it was still sparsely populated with only 303 people in the extensive meshblocks crossed by the proposed line. The differentiating characteristics of this segment were the lower than average proportion of those 0-19 years of age and the relatively low proportion (second only to segment A1) with personal incomes of \$50,001 or more.

Population Groups

179. BASED on the statistical analysis undertaken by my colleague Murray Ellis, I have characterised the population along the route of the proposed line into five broad groups:

- (a) people who are predominantly of European ethnicity, are employed full time, drive themselves to work, speak English and no other language, own their own dwellings, have telephone and internet, have two vehicles, and live with a partner;
- (b) Pacific Island peoples, who are more likely to be in rental accommodation, not to have any telecommunications or a motor vehicle, more likely to be receiving benefits and be unemployed, more likely to be a younger person, and more likely than the general population not to speak English;

- (c) the self-employed, possibly with employees, working in agriculture, forestry and fishing industries, who tend to be of higher than average age, to have higher than average personal and family incomes, and to be working at home (which includes farms);
- (d) employees or self-employed (such as contractors) in agriculture, forestry and fishing, working 60 or more hours a week, working at home (including working on farms), travelling to work by motor cycle, and being unpaid in the family business; and
- (e) people of Asian ethnicity, of Hindu religion, typically in the age range 20-24, renting their property for more than \$350 per week and having been resident overseas five years ago.

180. USING data on the location of dwellings in relation to the line supplied to me by Mr Lister, inspection of the cable routes, and population numbers and the average household occupancy rates from the 2006 Census, I estimate that in December 2007 there were:

- (a) approximately 1300 people living in houses which front onto the streets along the underground cable route between the Otahuhu Substation and the proposed Brownhill Substation site;
- (b) approximately 60 people living in properties adjoining the Pakuranga Substation and 400 in the immediate vicinity of the site in the suburbs of Golfland and Burswood;
- (c) approximately 600 people living in houses which front onto roads along the underground cable route between the Pakuranga Substation and the Brownhill Road substation site; and
- (d) about 1350 people living within a one kilometre wide band along the 186 km length of overhead section, that is 500 metres either side of the centreline.

181. I have plotted the distribution of dwellings at various distances from the overhead transmission line using the sections into which the route was divided

in the Easement Report released by Transpower in December 2005, to give an indication of the density of housing in the areas through which the proposed line passes. **Figure 2** (p76) shows the number of dwellings at three distances from the centreline in the segments of the histograms:

- (a) up to 100 metres;
- (b) 101-250 metres; and
- (c) 251-500 metres.

182. BECAUSE the segments are of unequal length I have also plotted the number of dwellings per kilometre in the line graph on the same chart using the right hand axis. The chart shows only a small difference as the segments are relatively uniform in length.

183. THIS chart shows that the highest numbers of houses within this one kilometre wide band along the proposed line occurred in Segment B in the vicinity of towers 33-42 and 46-61, which are north and south of Hunua. There were also slightly smaller peaks between towers 21-33 between West Road (west of Clevedon) and Highridge Road; in Segment C between towers 132-151 north of Te Hoe in the Taniwha Valley-Mangapiko Valley area; and between towers 213-224 which are west of Morrinsville from Hangawera Road to south of Kuranui Road. Taking into account variations in the numbers of persons per dwelling along the length of the proposed line, I have estimated that the northern section between Clevedon and Hunua had the highest density of population in this one kilometre-wide band and that there were approximately 400 people living within this band between Towers 32 and 61.

184. I have also plotted the distribution of houses at two further distances from the centreline:

- (a) from 501 to 1000 metres; and
- (b) above 1km but still within the visual catchment defined by Mr Lister.

This chart again has a line graph using the right hand axis, this time plotting the number of property purchases that have been completed by Transpower in these sections by mid-January 2008.

- 185.** THE pattern in **Figure 2** is basically repeated in **Figure 3** with the exception that this wider area takes in many more dwelling on the outskirts of Morrinsville between Towers 213 and 224. There is a reasonable correspondence between the number of dwellings within this band and property purchases. This is particularly the case in the Hunua area between Towers 46 to 61 where alignment decisions were made which ensured that some properties were purchased rather than having lines running either side of them, should the proposed line be built. The purchase of properties by Transpower has been undertaken on a willing-seller – willing-buyer basis so the pattern of sales is significantly influenced by the attitudes of the landowners.

Social effects during the planning phase

- 186.** I will describe the effects in the planning phase for each of the five categories listed in my "social effects framework".

Planning phase: Health and well-being

- 187.** I will start with the effects on people's health and well-being. These effects principally relate to stress generated by the Upgrade Project, which are like the effects of many other major projects. These effects are:
- (a) challenges to the notion that people have control over their own lives;
 - (b) threats to invalidate people's expectations about their personal situation and about their locality; and
 - (c) that people's aspirations for themselves, their families and their community may be confounded.

Figure 2 Number of dwellings at various distances from the centreline in Easement Report segments

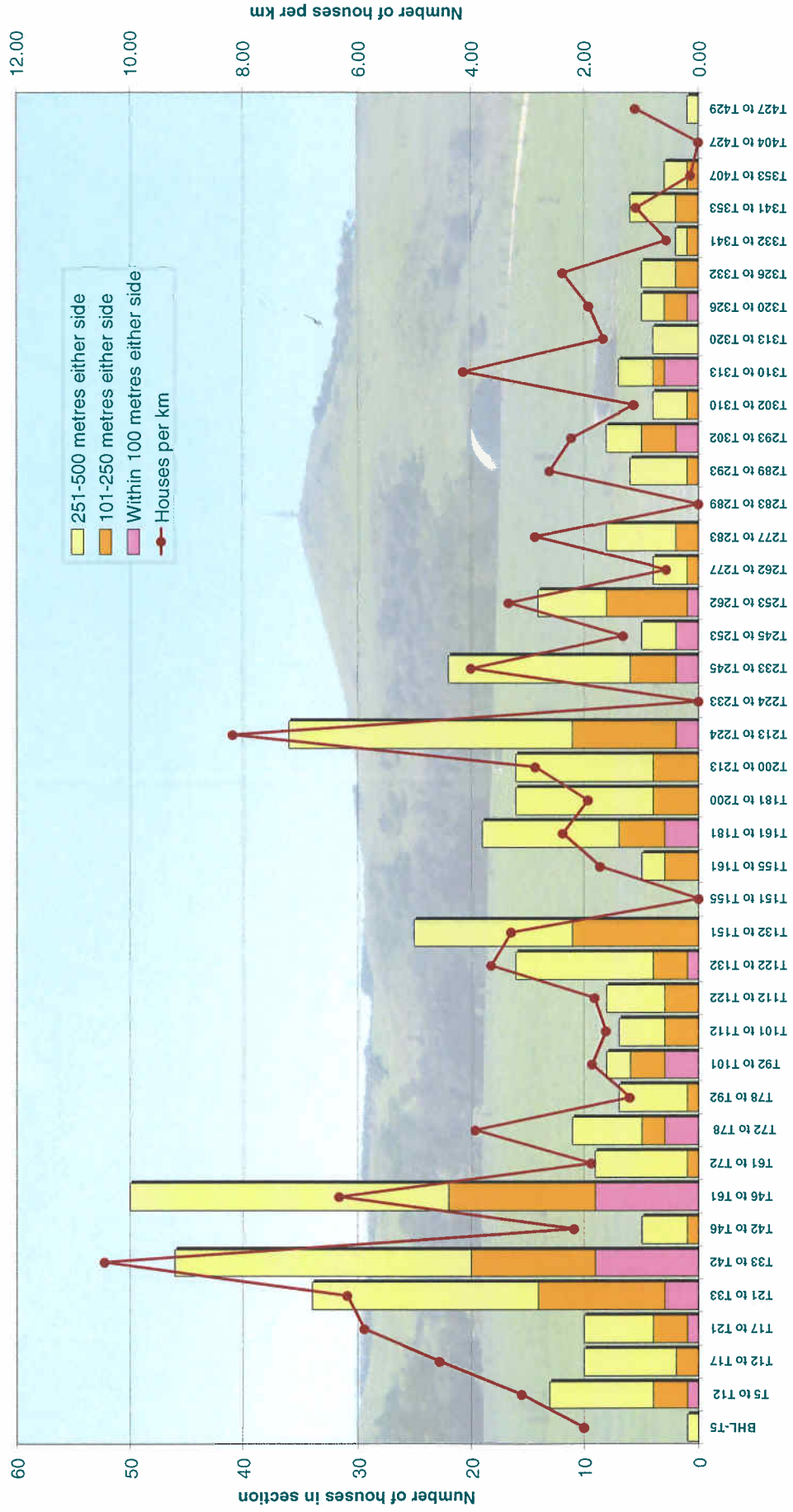
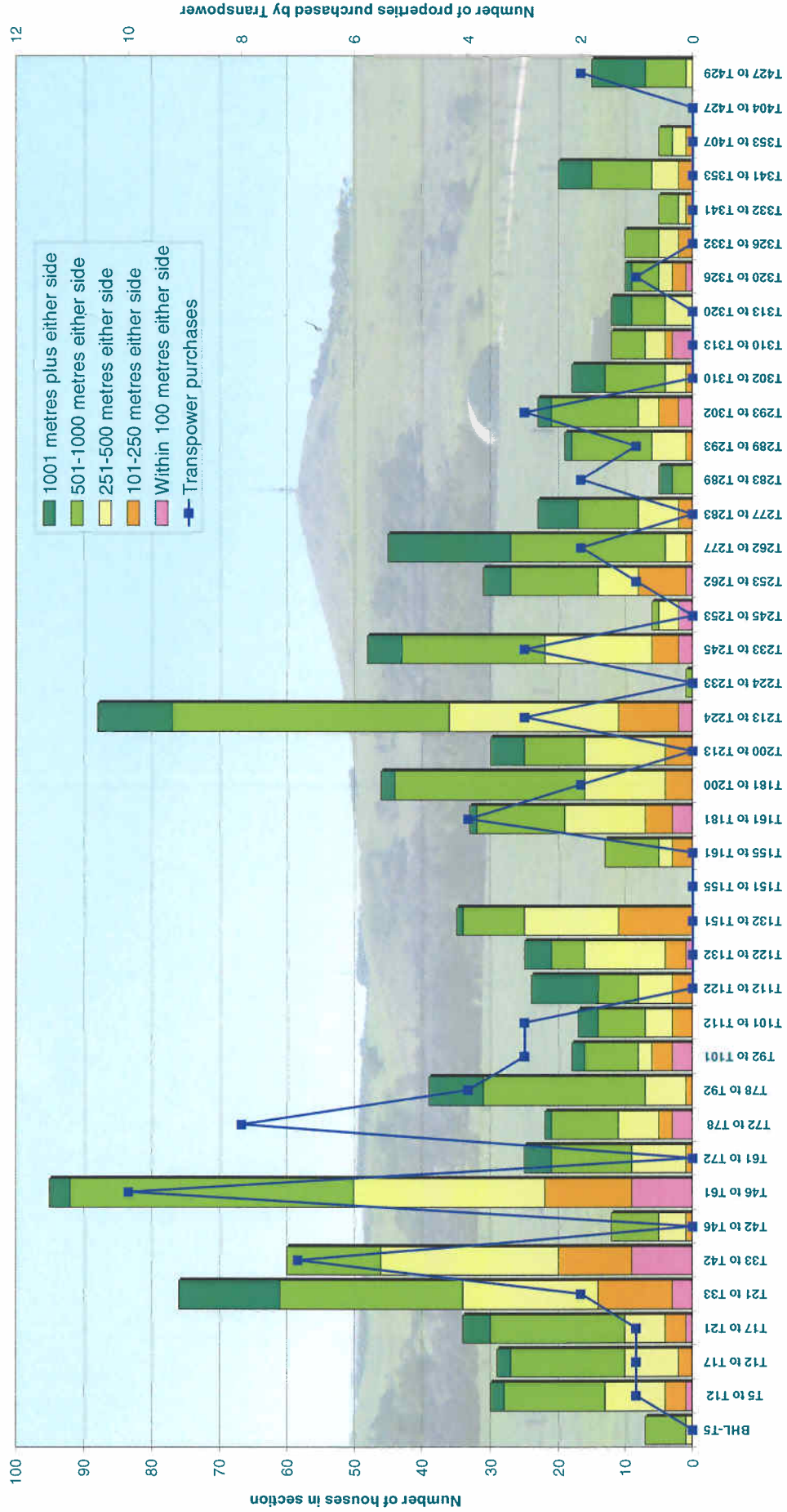


Figure 3 Number of dwellings at various distances from the centreline in Easement Report segments and Transpower property purchases



- 188.** **IN** this case, these effects would have been exacerbated by the way the Upgrade Project would have been a surprise for the vast majority of people living on the two routes under investigation. There were a number of statements relating to the need to upgrade the transmission system in the upper North Island prior to October 2004. The link between Whakamaru and South Auckland was also mentioned in Transpower's long term plans and at presentations during 2004. But, the announcement of the Upgrade Project from Whakamaru to South Auckland would have come as a surprise to most people along the two routes. The stress and anxiety that such announcements produce are well-known social impacts. It can affect a wide range of people, and result in a disruption to the order of their lives when a project proposal is announced. It can be a particular issue for older people who may have difficulty coping with the threat of change and people with medical conditions.
- 189.** **IN** terms of the stress generated by the announcement, the Upgrade Project is no different to many other large projects when they are first mooted. It is not possible to launch a project of this scale in a different way that will cause less stress, as every affected party needs to be contacted at the same time. The apparently abrupt manner of the announcement with no forewarning is also required given the effects that major projects can have on the property market. Equal treatment for all concerned requires that there be a single notification to all parties as far as practicable at the same time. The letters sent to each landowner and the public notices and comment in the newspapers ensured that no one had advanced notification which could have been exploited in property transactions.
- 190.** **THAT** said, there were no reports of the Upgrade Project creating stress in the vicinity of the established substations at Otahuhu, Whakamaru and Pakuranga or along the bulk of the underground cable routes from the substations to Brownhill Road.
- 191.** **STRESS** was reported during the consultation:
- (a) in the short section of the Otahuhu cable route between Jeffs Road and the transition station site under the Original Proposal;

- (b) by households in the vicinity of the proposed transition station/substation at Brownhill Road. This reporting included one person who was a "Managed Migraine Sufferer"; and
- (c) in the overhead section there were a number of reports of stress. Frequent reference was also made to the impact of the Upgrade Project in terms of creating uncertainty and putting people's lives on hold. The Upgrade Project was reported to have created significant frustration and affected people's quality of life. In a few instances landowners reported that the stress was so great that they had a "*mental breakdown*". Stress was also reported by people with prior medical conditions, including a person with cancer in remission who was concerned that this cancer might be affected by Electrical and Magnetic Fields.

192. **AN** interview was conducted by Dr Ludvigson with two doctors in the Clevedon area who reported observing a range of symptoms, including one person who was not able to go to work for several weeks. They reported that people had been affected financially both through the perceived loss of property value and through property transactions falling through. They also discuss a range of physical symptoms including falling sexual activity, people becoming irritable, and failing to cope but not wanting to talk about it. The doctors considered that the Upgrade Project has had a major impact on family life among people they knew. The doctors also reported that they had encountered lowered moods and an increase in anxiety (although not necessarily clinical depression) in the area following the October 2004 announcement.

193. **DURING** the initial phase of consultation on the two routes there was also significant frustration expressed at the consultation process, particularly in the way the Upgrade Project was perceived to put people's lives on hold. While unfortunate, this disruption of people's plans is an inevitable feature of major projects as community input into exploration and assessment of options is a necessary part of the RMA process. There is an inevitable tension between the time needed to make a considered assessment of options and an individual's wish to progress their personal plans. The ACRE process was used to minimise the number of people affected by focusing the consultation on two buildable routes, and in my opinion it did this successfully.

194. **THE** other aspect of the consultation which was undoubtedly problematic for many people was the way that many people wanted to engage at the macro level and discuss strategic issues like the potential to avert the construction of the proposed line by building new generation in Auckland and/or placing much greater emphasis on energy efficiency. Some affected parties were frustrated by what they considered to be a lack of integrated planning. Transpower's limited mandate was made clear to the community but many people persisted in advocating non-transmission alternatives right through the consultation process, and continue to do so in their submissions.
195. **SOME** of the coping strategies that people adopted to deal with the Upgrade Project had inherent risks which may now also be a source of stress. Some people chose not to engage with Transpower throughout the consultation, in some cases apparently relying on the Electricity Commission to turn the Upgrade Project down. They may now be anxious that they missed the opportunity to engage in matters, such as tower location in the easement phase of the consultation.
196. **AS** well as stress for individuals there were also a number of reports of differing responses within households, typically with one partner adamant about leaving the area, and the other less convinced. This situation could have caused tensions within a relationship. Often such stresses were reportedly associated with concern about the effects of the Upgrade Project on people's financial circumstances and their future plans.
197. **FEARS** were also expressed about potential future effects on health and wellbeing in terms of physical health and hazard exposure, perceptions about personal safety, risk/fear of crime, and the level of annoyances (dust, noise, and strangers visiting properties) relating to the construction and operation phases. These fears related to:
- (a) EMFs as a potential hazard to health;
 - (b) the possibility of a tower up to 70 metres tall falling on top of a house;
 - (c) the perceived threat to aircraft operations; and

- (d) concern about personal safety, crime (particularly theft) and annoyances.

198. THERE were also a number of reports of stress generated by interactions with strangers. A small number of women living alone expressed discomfort about people (who in the main were probably valuers contracted on behalf of Transpower) looking over their properties from the road. A number of landowners expressed dissatisfaction with Transpower's line maintenance contractors in public meetings and submissions.

Planning phase: way of life

199. AS with health and wellbeing, effects on way of life do not appear to have been a social impact on local communities associated with the underground cable routes or the Otahuhu, Whakamaru or Pakuranga Substations. The reported impacts have been almost entirely limited to:

- (a) households affected by the overhead section;
- (b) those on the eastern subsection of the Otahuhu cable route; and
- (c) those in the vicinity of the proposed transition station/substation at Brownhill Road.

200. THESE effects have largely been in terms of the time and energy people have spent on the Upgrade Project, by seeking to understand the Upgrade Project and to respond to it through the consultation process and through other channels. Beyond reading the Upgrade Project publications, researching transmission line issues, and discussions within and between households, time has been committed to:

- (a) attendance of meetings;
- (b) approaches to the Electricity Commission;
- (c) approaches to local, regional and national government officers and politicians; and

(d) formation and operation of lobby groups, including the maintenance of several websites.

- 201.** I have identified little evidence of effects on family stability in terms of households breaking up in the planning stage, although there was a report of one person moving away from the family home to get away from the Upgrade Project. Statements were also made by two landowners that they would have to move away from a property if the proposed line was built, even though a parent was on the adjoining property and they might not be able to replicate this situation elsewhere. This may be a case where an effect is deferred in the face of uncertainty about the project proceeding. While I noted earlier that the Upgrade Project may have caused stress within households, this may have not been sufficient to precipitate a break-up.
- 202.** **IN** terms of employment, there were reports of existing effects (as noted earlier) where people have been unable to go to work through worry about the Upgrade Project. There has also been concern expressed about future difficulty in recruiting and retaining staff on farms crossed by the proposed line (prompted by concerns about EMFs and health issues). While there have been a number of statements about the issue and letters from farm workers, the effect is not likely to manifest, if at all, until construction when the project becomes a reality. It may also be very difficult to separate out this one factor from others which might influence decision-making on whether or not to accept a position.
- 203.** **THERE** is no evidence that the Upgrade Project has changed attitudes towards local communities per se, although some people have decided that they would no longer wish to continue living where they were if the proposed line went ahead. By mid-January 2008, there were 160 households who had sufficiently revised their view of the area they live in, or whose circumstances had changed sufficiently, for them to approach Transpower to enter into negotiations to purchase their properties. Other people were known to be waiting for the final decision of the Electricity Commission before considering their position.
- 204.** **CONVERSELY**, the feeling of community may have strengthened in response to a perceived "external" threat. Certainly the formation of the several lobby groups as a result of the announcement of the Upgrade Project has increased

participation rates in local organisations (although this is reactive, rather than proactive).

- 205. THE** Upgrade Project has not changed any rights over or access to resources during the consultation phase. It has, however, made people aware and/or reminded them of the ability of network utility operators, such as Transpower to seek designations over private property through the provisions of the RMA, and exercise rights under the Public Works Act. It has also provided a chance for landowners to air complaints in relation to existing infrastructure, particularly the lack of any financial compensation for having transmission towers built on their properties in the past.

Planning phase: expectations and aspirations

- 206. IT** has been reported that the Upgrade Project has frustrated a number of people's expectations and aspirations about the future of their community, and their aspirations for their future and the futures of their children in the area subject to the proposed line. The proposed line was unanticipated and therefore a shock to people's expectation that the status quo would prevail or that any change would be in a direction that they would find acceptable. While this frustration of expectations is a general effect along the proposed line, perhaps the most significant changes are at the transition station/substation site in Brownhill Road, where the current vista of a rural block will now include the end of the proposed line, a transition station and eventually a GIS substation. Quite how long this block would have remained undeveloped, however, is open to question as there are already plans to develop the adjoining block at 227 Brownhill Road, and I understand from a meeting I had with the previous owner, Mr Boshier, that he had been in discussion with a property developer with a view to selling the block for subdivision.
- 207. THE** Upgrade Project clearly overturned a number of lifecycle-stage-related plans and expectations. These plans very largely relate to landowners intending to sell or subdivide their properties as part of their retirement planning. It is clear from my discussion with landowners and analysis of notes of public meetings, submissions and correspondence that a large number of landowners expect to be able to make a windfall gain from future subdivision. For instance, the effect on subdivision potential was mentioned 44 times in

submissions on the Interim Decision. Whether in practice such small-lot subdivision would actually comply with district plans might be another matter, but that did not reduce the sense of grievance.

208. A common theme in the consultation on the overhead section was the so-called "freezing" of property sales in the areas affected by the routes. This was reported by landowners to have resulted in sales or subdivisions falling through or radically reduced interest in properties. This effect was most pronounced in areas of potential farm subdivision for lifestyle blocks. In other cases the Upgrade Project potentially affected other provision people had made for their retirement, such as small forestry blocks.

Planning stage: culture

209. **TRANSMISSION** lines have been an accepted part of the infrastructure of this country since the early twentieth century. They became commonplace between 1950 and 1980, when about two thirds of the national grid was built. While not popular, they do not offend general cultural norms/values per se.

210. **ONE** cultural value which was seen by some as being challenged by the Upgrade Project is equity. Inequity was seen to arise in three main forms:

- (a) the perceived inequity between the benefits received by Auckland in terms of secure power compared to the impacts on the properties crossed by the proposed line. It was a matter of particular concern that Aucklanders were not required to do anything to avert the forecast security of supply problems or reduce demand to the extent that the need for the upgrade of the transmission line and its perceived effects might be averted;
- (b) the perceived inequity for people immediately outside the easement who receive no compensation when they may experience a comparable or greater adverse effect on their property than those located within the easement. The very limited compensation available outside the easement was perceived by the "adjoining" landowners to be inequitable. Some may, in fact, be more affected than a landowner with an easement if they have a tower nearby whereas the easement is only crossed by the lines. The perception

of inequity was increased because it was considered by those affected that people outside the easement were "subsidising" power to Auckland largely through an uncompensated loss of property value resulting from the visual intrusion of the towers; and

- (c) the perceived inequity for those not currently affected by transmission lines compared to those who will have the ARI-PAK A line removed from their property and thereby being seen to accrue windfall financial gains.

211. THE issue of fairness also arose in relation to properties with multiple transmission lines. It was asserted by one family (Mr W R and Mrs L M Storey of Mangapiko Valley Road, Ohinewai), whose property ownership pre-dated the construction of any lines, that they had done their "fair share" over the years and that the replacement of the ARI-PAK A line on their property with the much bigger new line was unfair. When planning the thermal upgrade of the Otahuhu to Whakamaru A and B lines, Transpower identified that there were 90 landowners with properties crossed by the A and B lines as well as the proposed line.

212. TURNING to other issues related to culture, I do not consider that the Upgrade Project poses a threat to cultural integrity in terms of the continuation of local traditions, and customs of any of the population groups along the route of the proposed line during the planning phase. I do not anticipate that it would do so in the construction phase or during the operation of the proposed line.

213. THE proposed line does pose a threat to some cultural values related to individual properties. Examples which were avoided in the final alignment included places where a placenta had been buried by the property owners, and trees had been planted by ancestors.

Planning phase: community

214. THE principal impact expressed during the planning phase relating to social infrastructure has been concern that the proposed line would have a negative impact on some schools in the overhead section. The fear expressed in some communities was that the presence of the proposed line would deter parents

from sending children to the local school, which would then translate into declining rolls and reduced resources. In an extreme case this could lead to school closure.

215. **IT** has been suggested that this effect has been experienced to a minor degree already, with Hunua School reporting the loss of two staff and difficulty in recruitment. Of the other schools relatively close to the proposed line:

- (a) Horahora already had declining rolls for several years independent of the Upgrade Project and could not identify a specific effect of the Upgrade Project;
- (b) Whitehall School had parents say that they would withdraw their children if the proposed line goes ahead; and
- (c) Brookby School had seen no evidence of withdrawal and indeed expected the roll to grow with new development in the area.

216. **GIVEN** the significance attached by local communities to the issue of declining school rolls, and in response to meetings with the Hunua School Board of Trustees, I undertook a literature search to try and identify any New Zealand research which assesses the impact of changes to transmission lines on school rolls. I did not find any published research on the topic. A more detailed investigation was then undertaken by Penny Laurensen of MWH which included a review of newspaper coverage. Ms Laurensen found two instances of changes made to transmission lines in the vicinity of schools. The schools were both in Wellington, namely:

- (a) the Raphael House Rudolf Steiner Area School, where a 110kV line which crosses over the grounds was upgraded in 1994/1995; and
- (b) the Otari School, where a high voltage backup power line running within 10 metres of the school was upgraded in 2001 for permanent use.

217. **THE** upgrade of the transmission line near Otari School created some controversy in the local community. Green MP Sue Kedgley stated in a press release (14 March 2001) that "*the increased usage creates an unacceptable*

[health] risk for families in the Wilton Area". However, in neither case is any impact of the upgrades apparent in the school roll when comparing the number of students before and after the changes to the transmission lines.

- 218.** **THE** closest parallel to transmission lines in terms of contentious infrastructure are mobile phone sites. Despite the outcry that has accompanied some mobile phone site applications there has been no systematic analysis of their impact on school rolls. A review was undertaken, again by Penny Laurenson of MWH.
- 219.** **WHILE** Telecom and Vodafone have about 1000 mobile phone sites each, neither keeps records indicating whether any of their mobile phone sites are close to schools. The Ministry of Education does not keep any records about the proximity of mobile phone sites to schools either.
- 220.** **IN** the absence of systematic data, a review of newspaper articles was undertaken which identified eight schools as having had mobile phone sites installed in close proximity (usually amid a level of controversy and protest by the schools and/or local community) in a range of locations. The school rolls were obtained for these schools and graphed to a range of significant dates, when proposed, when installed, and when they were in operation.
- 221.** **THE** results suggest that whilst the proposal of a mobile phone site in close proximity to a school might cause controversy, the actual installation of the mobile phone site does not generally result in a sustained reduction of the school roll. For instance, an article in *The Press*, (14 October 1997, p.6) reported that a survey of Greenbay Primary School parents indicated that the school would lose 300 of its 470 pupils. However, there was no such drop in the school's roll after the mobile phone site was installed.
- 222.** **OVERALL**, some parents do appear to have removed their children from some schools after cell sites have been installed close by. However, the roll statistics suggest that in most schools such incidents were fairly isolated, and any resultant reduction in the school roll was minor and temporary in nature.
- 223.** **IN** terms of the Upgrade Project, some response to approval may be seen in the school rolls. However, it may still be difficult to distinguish the impact of the proposed line from other factors which may contribute to people's

decisions to leave a particular area or to withdraw their children from the local school.

- 224. TURNING** to other community-related matters, no effects of the Upgrade Project on the unemployment level in the community, or dependency levels have been identified in the planning phase.
- 225.** I have, however, received reports that equity issues have generated some tensions within communities, in part by making discussions of the Upgrade Project difficult or impossible between those who are seen to be "winners" and "losers". On the other hand, it was reported in some localities that rather than being divided by some people qualifying for compensation and others not, their communities were united in their opposition to the proposed line. This unity was echoed in some public meetings held to discuss the choice between the east and west routes, where some people did not want to advocate that the other route be used. There were also reports of landowners not wanting to reposition proposed towers off their land onto a neighbour's property, and evidence of collective responses to the Upgrade Project through the formation of advocacy groups.
- 226. NO** effects of the Upgrade Project on crime rates, personal safety, and security of property have been identified in the planning phase beyond concerns generated by valuers undertaking property inspections from local roads in the overhead section. Similarly, no effects on demography appear to have occurred in the planning phase.
- 227. THE** workload on institutions, local government, and regulatory bodies was not raised by any members of the affected communities as an issue during the planning phase.

Overview of the Planning Phase

- 228. AS** could be expected, in the planning phase the people affected by the proposed line have reacted in different ways to the announcement of the Upgrade Project, the choice of route, and the proposed alignment. The extent and type of impact has been strongly influenced by personal and community characteristics and has varied between communities along the overhead line, along the cable routes and in the vicinity of the substations.

229. THE personal impacts of stress associated with anger, powerlessness and the sense of foregone opportunities, can be very powerful. These impacts can be compounded by people feeling compelled to take action, using valued time and other resources to engage with a proposal. However, public identification and consideration of alternatives are a fully embedded part of a modern society's considerations of major projects, and, in my opinion, these effects are an inevitable and unavoidable consequence of the project development process.

230. THE effects of the planning phase can be summarised as:

- (a) being either neutral or negative for those individuals and communities along the route from Otahuhu and Pakuranga in the north to Whakamaru in the south, with few people gaining. Those who may gain are those households where the proposed line diverges from the route of the existing ARI-PAK A line in Hunua and Whitford and the old line will be taken down. While a total of 297 properties are crossed by the alignment, there is a very large number of beneficiaries of the Upgrade Project in terms of secure electricity supply to the Upper North Island. The directly affected parties also benefit from increased network security;
- (b) the magnitude of the effects has varied along the route, but everywhere that the Upgrade Project has touched it has represented a significant disruption to people's lives. The area where a group of households potentially has the most significant new infrastructure is in the vicinity of the transition station/substation at 147 Brownhill Road, Whitford. Here, the potential effects have been significantly reduced by the choice of GIS for the substation and consultation on the location of the substation on the site;
- (c) the use of the ACRE process greatly reduced the area of impact of the Upgrade Project over that which might have occurred if a more extensive approach to consultation was taken. I have seen other projects where large areas have been affected by "possible" routes through urban areas which were impractical, creating unwarranted stress. I consider that the process adopted here strikes the

appropriate balance between the exploration of options and number of people affected. Even with the more focused approach used here, in the Route(ii) phase the area of impact extended up to one kilometre wide along over 350 route kilometres (by exploring both west and east route options). The area of impact was significantly reduced with the selection of the west route in July 2005. Under the Amended Proposal the area of impact was later extended to include a new cable route between Brownhill Road, Whitford and the Pakuranga substation and the area surrounding the Pakuranga substation. There were, however, strong strategic reasons to extend the area of coverage at this stage;

- (d) the most vulnerable community along the entire length of the two routes was that in the vicinity of the Otahuhu Substation and along the underground cable route as far as East Tamaki Road. The impact on this group was reduced by the decisions to put new equipment well inside the boundaries of the existing substation and the use of underground cable. Special steps were also taken to communicate details of the Upgrade Project to the local communities in the consultation programme by radio broadcasts in Pacific Island languages; and
- (e) there were severe constraints on the extent to which impacts of the planning phase could be mitigated for the affected communities (as distinct from the avoidance of impact achieved by the ACRE process if people from a wider area had been consulted) given the desirability to consult affected and interested parties. During the process, impacts have been mitigated in three ways. Firstly, by seeking to keep the decision-making period as short as possible while allowing appropriate time for people to understand the Upgrade Project and consider the implications for themselves, their families and communities. Secondly, by providing accurate and timely information about the project and its actual effects to those affected. Finally, by developing effective working relationships with individuals and groups, where this has been possible.

Social effects during the construction phase

231. I will now turn to the effects of the construction phase. I have drawn on three sources of information in making this assessment:
- (a) community inputs through the consultation;
 - (b) effects reported on other transmission line projects overseas; and
 - (c) the evidence of Mr Rasul and Mr Patrick to this Board.
232. **THE** nature and intensity of the potential construction effects of the proposed line can be expected to vary between the substations, the underground cable routes, and the overhead line because of the nature and duration of the works involved. The possible effects relate to:
- (a) disruption to property enjoyment and use;
 - (b) noise and vibration from a variety of sources including vehicles, helicopters, and excavation;
 - (c) dust;
 - (d) traffic-related hazards;
 - (e) physical hazards (such as trenches) posed by works;
 - (f) presence of construction staff on property; and
 - (g) disruption to local utilities.
233. I will discuss the five themes of social effects in turn, starting with health and well-being. When interpreting the nature and scale of the effects I have been encouraged by Transpower's acknowledgement, as stated in Mr Patrick's evidence, that there is significant potential for transmission line construction and dismantling activities to have high impacts on the lives and activities of affected land owners, local communities, and other stakeholders and some disruption is inevitable. I have also reviewed the intentions in terms of the

preparation of a Construction Management Plan (**CMP**) and Site Works Plans (**SWP**) and tested the extent to which they are intended to cover issues that I am aware of from consultation, such as the impact on community facilities. For instance, I anticipate that there would be sufficient flexibility in the works programme to schedule the removal of the ARI-PAK A line from its close proximity to the Paparimu School out of school hours.

Construction phase: health and well-being

- 234. THE** potential impact on physical health, the level of hazard exposure and on the level of annoyances (dust, noise, strangers visiting properties) will vary significantly between properties along the line. Mr Patrick has identified in his evidence a range of effects for the nine steps in the construction of the overhead line. These include social effects such as the hazard posed by construction vehicles on the property, noise, dust and vibration of construction activities and disruption to property enjoyment and use.
- 235.** I anticipate that some people living in the overhead section may also have an adverse emotional reaction (which may range considerably in degree) once construction begins. The start of works would confirm, once and for all, that the proposed line to which many people have objected was proceeding (even though landowners with easements over their properties would have received financial compensation). This confirmation could well affect perceived quality of life, subjective well-being, and self esteem. For some, it could be a source of stress and depression.
- 236. IN** the underground sections, the potential risks in the construction phase relate mainly to the hazards presented by open trenches and the additional traffic on local streets (including heavy vehicle and equipment movements). The whole operation will be subject to a construction management plan designed to minimise nuisances and other effects, as discussed in the evidence of Mr Joyce and Mr Prince. This plan will include placing barricades on both sides of the trench with lights attached for night-time warning. The cables will be installed in 600-800 metre sections between joint bays in three steps involving excavation, cable-laying and trench reinstatement. Each of these operations might take one day. For the rest of the six to eight week construction period the trench will be open. This process will be repeated in

the many streets that are too narrow to permit two cable circuits to be installed at once.

237. **ONLY** one set of cables will be trenched on the Pakuranga cable route between the Pakuranga Substation and Dunvegan Rise as the second circuit will be installed in the existing 1.8 metre diameter "tunnel" used by the ARI-PAK A line. This use of the tunnel will reduce the effects in this area, although there may be some additional effects if it is necessary to break into the "tunnel" to create new joint bays and at the end of the culvert with the noise and traffic associated with the cable pulling.
238. **CONCERNS** were raised in two localities along the overhead section by women worried about being at home alone in the construction phase. Such fears need to be given careful consideration in project planning, particularly in terms of the communications protocols between the project and local communities that are to be put in place.
239. **WHEN** assessing the extent of these effects I am mindful that while no major transmission line has been built in New Zealand since 1987-88 when the Huntly to Stratford line was installed, construction of transmission lines is a well established procedure overseas and there is considerable expertise available to implement the project in a way which minimises social effects in terms of health and well-being. The CMP will be the main framework for managing effects at the community level through the inclusion of provisions relating to vehicle movements, methods for storing and handling materials, and so on. The SWP takes this down to the property level by identifying all the works to be carried out on the property, and all the issues associated with working on the property. That these SWPs are developed in consultation with the landowner should assist greatly in minimising effects. With effective landowner liaison the effects on health and well-being should be minimised (although not eliminated). I note in Mr Patrick's evidence that there is already an established protocol for providing information prior to works (paragraph 9) and that draft Access and Construction Assessments have already been supplied to approximately 120 landowners.

Construction phase: way of life

- 240.** I expect that in the underground sections, the installation of the cables will make life somewhat less convenient for local residents and road users during the periods when the trench is open in the roadways outside houses, businesses and public facilities. Steel plates will be placed over the open trenches to allow access to driveways where this is feasible, although in some instances alternative parking arrangements may be needed.
- 241.** **ON** the Otahuhu cable route, the rear entrance/egress of the fire station at the junction of East Tamaki Road and Springs Road may need to be used while work is undertaken between Johnstones Road and East Tamaki Road. Construction could be the source of significant disruption of access to the Sir Edmund Hillary Collegiate in Franklyne Road, as well as creating potential noise issues in classrooms, including the music room which is near the road. There may be the opportunity to work with the school principal and Board of Trustees on their access and parking, so that it is enhanced when the area is reinstated. If possible, the works should be scheduled in the school holidays. Particular attention will be needed to maintain access to streets on the north side of Johnstones Road and especially the cul de sacs at the eastern end.
- 242.** **THE** cable route from the Otahuhu Substation also passes the entrance to Ngati Otara Park, through a passive recreation reserve at Otara Creek, and through a portion of Barry Curtis Park. As such, it may create minor temporary effects on access to, or use of, the recreational facilities. It will be important to maintain access for children attending the Sir Edmund Hillary Collegiate.
- 243.** **ON** the Pakuranga cable route there are also a number of cul de sacs that will need particular attention to provide access to dwellings. Closure of a section of Point View Drive would result in significant detours for some residents. Access to properties in Brownhill Road will also require careful management during the reconstruction of the road and cable-laying.
- 244.** **APART** from these disruptions, I do not anticipate that the construction phase will negatively affect other aspects of the way of life of people in the vicinity of the underground cable sections beyond limitations placed on any recreational use of these roads.

- 245.** **THE** effects of construction on daily life for properties in the vicinity of the Brownhill Road transition station/substation are likely to be most acutely felt in the upper Brownhill Road properties overlooking the site and the adjoining properties to the east. These properties are exposed to potential construction nuisances, including noise and dust because of their elevation. Any nuisance is potentially increased by the prevailing wind being from the south-west, blowing across the site towards the dwellings. These properties do not have reticulated water supplies so their roof supplies could be vulnerable to dust from construction and an alternative supply may need to be provided. The construction could also hamper property enjoyment, including rendering patios/outside areas less useable over the construction period.
- 246.** **IN** the overhead section, the extent to which construction affects daily life will vary from property to property in the same way as hazard exposure and annoyances. Again effective community liaison and site works planning should do much to minimise the effects.

Construction phase: family structure/family stability

- 247.** **THE** construction phase could well see an acceleration of any trend established in the planning phase in terms of family structure/family stability. Construction should not, however, have any significant impact on participation in social networks, attitude to local community or employment/unemployment, except to give rise to the prospect of jobs in some areas.

Construction phase: expectations and aspirations

- 248.** **THE** construction phase is likely to have an impact on the expectations and aspirations of people living in the overhead section and in the vicinity of the transition station/substation about the future of their community, and their aspirations for their future and those of their children. It will confirm that such thinking needs now to be tempered by the presence of the proposed line. For the large majority of people in the underground sections, I expect that the existence of the proposed line buried in the roadway will have little consequence, so its installation will not have the same significance. Similarly for the substations at Otahuhu, Pakuranga and Whakamaru, I consider that

the new works will have little effect in terms of expectations and aspirations as these facilities are already well established in their existing locations.

Construction phase: culture

- 249.** I do not consider that the construction phase will pose any threats to the cultural integrity of the areas through which the line passes. The removal of native bush, or individual trees, however, could challenge some cultural values. Construction could also be expected to increase any prior feelings about inequality of the distribution of benefits and costs/effects, such as those between Auckland as the perceived beneficiaries, and the areas through which the line passes as experiencing adverse effects.

Construction phase: community

- 250.** I anticipate that any community effects related to the Upgrade Project will become most apparent in the construction phase when physical works confirm that it is indeed proceeding. For example, in terms of impacts on community social infrastructure, the effects on small rural schools rolls, could be expected to become apparent by this stage, if they were going to happen. Establishing that such an effect occurs would require careful monitoring of the school population. Even then I have reservations that it would be possible to reliably demonstrate that the transmission line was indeed the cause of changes in the school roll.
- 251.** **THE** construction programme for the overhead section is currently the subject of a competitive tender. The details of the construction programme have yet to be resolved. It is currently not possible to make definitive judgments about the potential effects of the presence of the construction workforce on the local communities. However, I have been informed by Transpower of a number of key aspects which make a preliminary assessment possible.
- 252.** **IN** projects such as these the usual range of factors to be considered in the assessment of social effects include:
- (a) the size and skills of the construction workforce;
 - (b) the location of construction camps;

- (c) the work programme including daily hours of work;
- (d) the final set of amenities provided at the construction camps and the consequent demand for local services;
- (e) the degree of engagement with local communities in supply of goods and services (rather than simply out-sourcing from a large centre);
- (f) the take-up of employment opportunities by local residents and the resultant mix of local and outside workers; and
- (g) location choices of project workers who do not live in the construction camps.

253. IN this case my assessment is based in large measure on the following information supplied by Transpower:

- (a) the workforce will number less than 250 with perhaps half of these coming from overseas. The main contingent of people coming from overseas will be an established group of Filipino workers currently working in Australia for the conductor installation who will be in New Zealand for approximately 12 months;
- (b) there will be no construction camps for the workforce;
- (c) the tenderers for the alliance contract are looking to use existing accommodation and other facilities, wherever possible which will result in spending in local communities on other goods and services as well;
- (d) there will be a limited number of families among the overseas workers who will therefore place no undue pressure on local schools or other amenities;
- (e) there will be local contractors engaged in the construction, such as building the access tracks and other civil works; and

(f) the work on individual properties is spread out over time, and both the overall timing and hours of work during a day can be adapted to some extent to suit conditions on particular properties, such as the use of races on a dairy farm.

254. **IN** my opinion the relatively small scale of the workforce, the use of an establish group of riggers for the conductors with reportedly a good reputation for behaviour and the use of local contractors where possible, would both minimise the disruption to communities and result in income for companies based in the Waikato. Overseas experience reported to me by Mr Rasul indicates that employment for locals on transmission line construction can open up career paths which might not otherwise be available.

255. **THE** absence of construction camps with the integration of workers into local communities would also obviate fears usually raised over construction projects, including increased crime rates for both personal injury and property loss, anti-social behaviour by construction workers, higher birth rates and social tensions/divisions within the community. It is possible that the project workforce could create a need for medical services (especially emergency care), to which local communities may not be in a position to respond and for which there is no budget. Dispersal of the workers should however also limit this effect.

Overview of the construction phase

256. **MY** analysis of the social impacts of the construction phase has drawn on the experience of similar projects in New Zealand and overseas which has then been related to the particular attributes of the communities affected by the proposed line, as well as the information available to me in relation to the Upgrade Project.

257. **THE** construction phase will impact directly on landowners and land users and will need to be carefully and positively managed in order to limit the potential social effects. This management is particularly the case given the seasonal nature of the farming operations which take place over much of the alignment, and which could give rise to practical issues and associated stress for some landowners.

258. **THE** construction phase may affect communities in both a positive and negative light. It could increase skills and provide more employment on at least a temporary basis (although downside aspects to this potentially positive effect are the high levels of employment at present, and the reported difficulty in obtaining farm workers, where the Upgrade Project may actually compete for labour), by temporarily stimulating local economics, and, negatively, by bringing an influx of new people into smaller communities, resulting in increased housing costs and strain on social services. Many, but not all potential effects, can be minimised through the provision and management of suitable housing and services. The decision not to have construction camps is a critical factor in the minimisation of potential effects.
259. **FROM** what I have seen to date in terms of the proposed content of the Construction Management Plan, the development of Site Works Plans and the emphasis on stakeholder liaison as the initial step in the construction process, I believe that appropriate processes are envisaged to minimise, if not eliminate, the social effects of the construction phase.

Preliminary assessment of operational phase

260. **AFTER** the experiences of the planning stage and expectations for the construction phase, it is my view that the social effects of the operation of the line with its associated substations will be more modest and certainly more focused. Two factors are likely to contribute to this:
- (a) the natural turnover in the communities will result over time in an increasing proportion of people for whom the proposed line was there before they moved in; and
 - (b) adaptation by residents to the existence of the proposed line over time as it moves from something to be resisted to part of the landscape.
261. **THIS** assessment is not to underestimate the potential for on-going stress and resentment over the presence of the proposed line, but it can be anticipated that the majority of people will eventually tend to either adapt and largely accept the Upgrade Project, or leave. Such effects may well depend on the management of the construction phase and whether individual and community

values are seen to have been respected, and compensation is seen to have been fair and reasonable.

Operational phase: health and wellbeing

- 262.** **THE** principal long-term effect of the operation of the proposed line in terms of physical health and hazard exposure will be determined largely by the effectiveness of the ICNIRP guidelines adopted by the Ministry of Health in protecting people's health in terms of exposure to EMFs. This matter is addressed in the evidence of Dr Black, Professor Wood, Professor Elwood, and Dr van Rongen.
- 263.** **ANOTHER** perceived hazard, related to the risk of tower failure, will only be relevant in perhaps three cases where houses are closer to the centre-line than the height of the towers. Maintaining separation between dwellings and the towers was a significant factor in determining the location of the final alignment of the transmission line. The six houses within the easement will be removed. I have been informed that the actual level of risk faced by dwellings near to the towers is extremely low with a failure rate of about 0.00003 a year. These matters are addressed in the evidence of Mr Lake.
- 264.** **THE** other perceived potential effect in terms of physical health relates to the perceived threat to aircraft operations and the associated risk that these may crash on a property. Airport safety issues raised principally in connection with Ardmore Airport and aerial topdressing are addressed in the evidence of Mr Sullivan and Mr Nichol.
- 265.** **IN** the underground section, there is a remote possibility of a contractor digging into the cable with a mechanised digger (with fatal consequences). This eventuality would require not only complete ignorance of the presence of the cable, but also ignoring the cable route markers, avoiding the regular maintenance patrols, an ability to penetrate the concrete capping, and ignoring the associated warning tapes.
- 266.** **THE** risks in terms of physical health from the operation of the transition station/substations relate only to unauthorised access to the sites. In the event that someone got inside the security fencing they could come into direct contact with high voltage electrical equipment, which could prove fatal.

267. THE extent to which landowners are affected by the operation of the proposed line in terms of annoyances will in large measure be determined by:

- (a) the quality of Transpower's stakeholder management plan for landowners;
- (b) the quality of management supervision of the maintenance contractors; and
- (c) the quality of line maintenance (to limit factors which promote adverse social effects, such as insulator noise).

268. IN the overhead section, some of the tower locations may create on-going frustration for the landowners where it has not been possible to accommodate some of their requests in the detail design of tower location. This could be increased for those landowners who chose not to engage with Transpower in the consultation on the position of the centre-line between July and November 2005.

Operational phase: way of life

269. ONCE constructed, the substations, underground section and transition station/substations can be expected to have minimal or no impact on the way of life of people living close to these facilities, given Transpower's intention to undertake appropriate mitigation measures. There will be a period while the vegetation planted to screen the GIS substation at Brownhill Road reaches the height where it will reduce the visual impact of the structures.

270. EVEN in the overhead section, once the proposed line is built, the effects on how people work, relax, and interact with one another on a day-to-day basis are likely to be muted as the proposed line becomes part of the local environment. People's satisfaction in being out on their properties may diminish from the visual intrusion of the proposed line but again, people tend to become accepting of things and notice them less, or leave. There may be an on-going issue in terms of equestrian activities on properties crossed by the line with some claims in submissions of hypersensitivity in horses which is addressed in the evidence of Mr Rooney.

- 271.** **IT** seems likely that any impacts that the proposed line might have on family structure, and divorce rates would occur during the planning or construction phases, if tensions within families about going or staying on a property were to reach a level where family stability is threatened.
- 272.** **THE** operational phase should not, per se, have any impact on employment, unemployment, or job opportunities in either the overhead or underground sections of the line. The risk that has been identified in employment terms is actually the reverse - that farmers will not be able to recruit or retain staff or attract sharemilkers. This may be unduly alarmist given that:
- (a) there will be no workplaces where people would normally spend extended periods (such as milking sheds) within the easement; and
 - (b) people work under the existing 110 and 220 kV lines in the vicinity of the proposed line.
- 273.** I anticipate that by the operational phase, the attitude towards the new transmission line and the way the affected and interested parties in the Upgrade Project respond to it will have become less apparent, though there may be a measure of anger, along with the acceptance/resignation. Past experience suggests that the threats of sabotage that have been voiced at times during the Upgrade Project are unlikely to materialise. Attitudes to the local community may change if there is a significant turnover and, with it, some aspects of participation in social networks. While landowners may accept an easement on their land and the associated compensation, some may still harbour issues over the loss of partial control over a portion of their land.

Operation phase: expectations and aspirations

- 274.** **BY** the time the proposed line is built (should approval be forthcoming), I expect landowners to have fully factored it in to expectations and aspirations about the future of their community, and their aspirations for their future and the future of their children.

Operation phase: culture

275. **IN** my opinion, the operation of the proposed line is unlikely to create any adverse effects on cultural integrity (continuation of local culture, traditions) or any additional issues not raised previously in relation to key values such as equity.

Operation phase: community

276. **IN** the operation phase, I do not anticipate that the proposed line will have any significant effects at the community level unless the concerns that fears about EMF do in fact result in significant reduction in school rolls at Hunua, Whitehall and Horahora. As a network utility maintained by contractors, the proposed line is unlikely to otherwise affect community cohesion, stability, character, services or facilities.

Overview of the operational phase

277. **ONCE** constructed, any infrastructure like the proposed line is effectively part of the environment and is factored in to people's thinking about a location. The principal social effects of the line are experienced in the planning and construction phases and are typically addressed through compensation, mitigation, the changeover in population, and the acceptance of the reality of the existence of the line by those who remain.
278. **THERE** are potentially a number of on-going issues related to the operational phase in terms of nuisance effects related to the location of towers, and interactions with contractors. The latter were raised a number of times in the consultation and would appear to be a source of some aggravation for a number of landowners. Other potential on-going issues such as the perceived health risk, noise, effects on farming operations, and visual effects are all addressed in the evidence of other witnesses.

PART B ISSUES RAISED IN SUBMISSIONS

Issues raised by Mary Whitehouse (Submission No. 1079)

279. **MS** Whitehouse raises issues in relation to the Clevedon, Brookby area. Ms Whitehouse submits that the Upgrade Project:
- (a) -- has upset the well-being of many residents on the proposed route, who have sold their homes and farms due to the uncertainty the proposal has produced; and
 - (b) the project has affected the whole community.
280. **MS** Whitehouse raised similar issues in a submission to Transpower on 8 April 2005 but chose at that stage not to seek a response or to be kept informed about the project.
281. **IN** terms of the property sales to Transpower in the Clevedon and Brookby area I refer you back to **Figure 3** which shows property purchases by Transpower to mid-January 2008. I will define the western boundary of Brookby as Tower 6 where it adjoins the Turanga catchment, and the southern boundary of Clevedon at Tower 33 on Highridge Road, the catchment boundary with Hunua. Within this length of 13.05 km, Transpower has purchased five dwellings. In my opinion this does not constitute "many" of the residents on the proposed route (approximately 7% of the dwellings in a band one kilometre wide across the route). This number can be compared with the usual rate of movement in the Clevedon area. The Census of 2006 found that 966 (39%) of the usual resident population of 2508 in the Clevedon Area Unit were living elsewhere in New Zealand in 2001. Even if the house sales along the route were attributed entirely to the Upgrade Project, the number is small compared with the population turnover in the area.
282. **MS** Whitehouse asserts that the project has affected the whole community. This is probably correct although the degree of effect would vary widely between different people in the community. The ACRE process has sought to define a route that minimises a range of effects but it cannot eliminate them entirely. The preferred solution of undergrounding a much greater length of

the line as advocated by Ms Whitehouse is discussed in the evidence of Mr Wildash.

Issues raised by Denis and Christine Hale (Submission No. 0934)

283. MR and Mrs Hale's submission relates to all NORs and resource consents. Mr and Mrs Hale state that:

"We oppose this line being built on a 65 metre easement when health warnings suggest a precautionary distance of 600 metres should be maintained. EMF and ionized particle emissions have been proven to cause numerous diseases including childhood leukaemia. We had intended to build on our property - these revelations have made us reconsider. We are also unable to sell our property in a fair market environment with these issues hanging over us."

284. THE validity of the assertions made in relation to EMFs is addressed in the evidence of Dr Black, Professor Elwood and Dr van Rongen. I would, however note in relation to any assessment made by Mr and Mrs Hale that:

- (a) the alignment of the proposed Upgrade Project follows exactly that of the existing ARI-PAK A line across the Hale property at 273 Ferndale Road, Maramarua. The proposed line does not have a tower on the property like the existing line although there is one almost immediately adjacent to it on an adjoining property (tower 97);
- (b) the proposed centreline for the new transmission line is at the extreme western part of the property and approximately 830 metres from the nearest point of the road frontage onto Ferndale Road. This gives them the separation from the transmission line that they appear to seek, should they wish to build a dwelling on the property to replace the existing 1920s fibrolite and batten dwelling on the property (which requires some maintenance to bring it up to an acceptable standard for rental according to a valuers report I will discuss further shortly); and

(c) the property immediately adjacent to that of Mr and Mrs Hale to the west is crossed by all three Otahuhu to Whakamaru A, B and C lines within approximately 710 metres of their property boundary.

285. **MR** and Mrs Hale refer to their inability to sell their property. It is a recurring theme of major projects such as this that they have an impact on the property market and I have referred previously to instances where landowners have claimed that property sales have fallen through. After a while, the market adapts to the changed circumstances.

286. **THE** GridTracker record shows that Mr and Mrs Hale formally requested that Transpower buy the property in June 2006. There were a number of interactions in the subsequent months with valuations produced. The valuers retained by Mr and Mrs Hale at Transpower's expense were Marsh and Irwin of Pukekohe. Marsh and Irwin assessed the current market value of the property at \$1,835,000. On 10 April 2007 Transpower were informed that Mr and Mrs Hale did not intend to continue discussion towards purchasing the property. Contact continued thereafter with a letter from Transpower to Mr and Mrs Hale on 12 June 2007 records that:

"I note that you have met with and had several discussions with Carl Fischer in respect of the respective valuations of the property and for the easement compensation. Mr Fischer has recorded your disappointment with your own valuation and with Transpower's own assessment. Mr Fischer has previously asked you what your expectations were. At no stage would we consider that the value of your property is at the \$3 million plus GST level that you suggest it is worth."

On the basis of the conversations with the case manager, the inability of the Mr and Mrs Hale to sell their property may be influenced by the price they are seeking.

Issues raised by Lorraine Joan Bilby and Ross Charles Stewart (Submission No. 0730)

287. **MS** Bilby and Mr Stewart have made a submission regarding social effects. The social effect referred to is the way that the proposal changes the context

of people's lives. The submitters refer to *"Many of the people affected by this proposal have had their lives "put on hold" for three years due to this proposal."* I have acknowledged the disruption of plans and expectations earlier in my evidence. I consider that the Upgrade Proposal is similar in this respect to other major projects I have worked on, such as the Albany to Puhoi Realignment (**ALPURT**) project on State Highway 1.

- 288.** I have also discussed the various circumstances which have contributed to the extended timetable, including the withdrawal of the Original Proposal. The original intention was to lodge the Notices of Requirement and Resource Consent applications in April 2006. I consider this effect to be an inevitable consequence of the careful exploration of options under the Resource Management Act, and that the time taken by Transpower in consultation was appropriate to enable affected and interested parties to participate in the process.
- 289.** **MS** Bilby and Mr Stewart make specific mention of the ageing population on the land and state that *"by the time this line is commissioned (should it be allowed to go ahead) many will be in their seventies and will not have had the chance to retire due to the fact that their lives have changed so significantly. Many properties are unable to be sold at this given time."* The extent to which it may happen, needs to be assessed within the context of the wider dynamics of farming in the Waikato where I understand there has been significant farm amalgamation, which is on-going. The impact of the line on farming activities is discussed in the evidence of Mr Hall. Landowners are also compensated for the effects of an easement over their property as discussed in the evidence of Mr Miles.

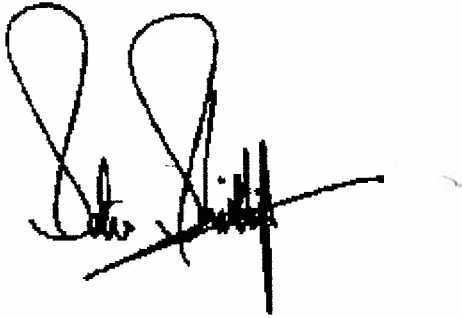
CONCLUSIONS REGARDING SOCIAL IMPACTS

- 290.** **THE** social impact assessment my colleagues and I have undertaken has identified a range of effects on individuals and communities along the route of the proposed line in the planning, construction and operation phases.
- 291.** **IN** my opinion, the number of affected parties and the scale of the effects have been effectively minimised by the use of the ACRE process which, from the outset, took into account social aspects such as settlement patterns, and cultural and heritage values. The Area and Corridor stages effectively

eliminated routes running through major population centres. During consultation, Transpower then considered inputs from affected and interested parties in finalising the alignment of the proposed line and the location and design of the substations.

- 292.** **THE** choice of underground cables for the routes from the end of the overhead section in Whitford to Pakuranga and Otahuhu has been a major factor in minimising effects at the northern end of the proposed line, while the use of GIS at the Brownhill Road substation will minimise the effects on residents in the properties adjoining the site.
- 293.** **THE** stresses generated in the planning phase are in large measure an inevitable consequence of a large project such as this which requires consideration of options. The choice of options has also generated equity effects in some areas where the ARI-PAK A line will be removed and the proposed line will follow a different path.
- 294.** **SOME** of the stress associated with the Upgrade Project has been the result of a dual Electricity Commission and RMA approval process.
- 295.** **THE** construction phase will inevitably generate a range of potential social effects with the influx of materials and personnel required to construct the line. These will include a range of potential hazards on properties where works are undertaken and within the surrounding communities (particularly through extra traffic on local roads).
- 296.** **THE** modest size of the workforce in relation to the population of possible areas where they may reside on local roads combined with the decision not to locate the staff in construction camps and the use of local contractors and labour should, however, both limit potential negative effects on communities and provide some employment and income benefits. The sporadic nature of the works along the line will also mitigate effects somewhat with the longest duration of construction effects at the substation sites.
- 297.** **THE** on-going issues related to the operational phase in terms of perceived health risk, effects on farming operations, and visual effects are all addressed in the evidence of other witnesses. I do not anticipate that the operational phase will create other social effects provided that Transpower manages the

interactions between its line maintenance contractor and landowners effectively.

A handwritten signature in black ink, appearing to read 'Peter Howard Phillips', with a long horizontal stroke extending to the right.

Peter Howard Phillips

31 January 2008

APPENDIX 1

Transpower Commitment to Consultation

May 2004

<http://www.transpower.co.nz/?id=4960>

Accessed: 1 February 2008

Transpower is the owner of New Zealand's high-voltage electricity transmission grid (the national grid). The national grid comprises approximately 12,000 kms of transmission lines and over 170 substations and links electricity generators with lines companies and major electricity users. Transpower is also the System Operator responsible for co-ordinating the transmission of electricity across the national grid.

Transpower is committed to responsibly developing and managing its assets in a way that has regard for the environment and the interests of communities.

In undertaking its business, Transpower consults stakeholders on a range of issues that affect the public.

When undertaking consultation, Transpower's objectives are to:

- Inform the public of Transpower's grid upgrade proposals by providing balanced and objective information that will assist people in understanding the issues, alternatives and proposed solutions;
- Obtain public feedback to assist in the identification of potential environmental effects, and ways in which these can be remedied or mitigated; and
- Consider feedback in finalising its proposals.

To achieve its consultation objectives, Transpower will:

- Keep the public informed using "plain english" publications and material;
- Provide an opportunity for people to give feedback;
- Listen to and acknowledge comments; and
- Provide feedback on how public input influenced the decision.

Dr Ralph Craven
Chief Executive

APPENDIX 2

Alternative Solution Reports

Assessment of HVDC Transmission Options between Whakamaru and Auckland - May 2005

Comparison of High Voltage Direct Current and High Voltage Alternating Current Grid Upgrade Alternatives - May 2005

Security of Supply into Auckland - Assessment of Alternative Solutions - October 2004

Peer Review of Choice of Voltage for Development of the New Zealand Grid - February 2004

Need Analysis Reports

Auckland Supply Reliability Investigation - Transmission Network Analysis Final Report - May 2007

Underground Cable Reports

Preliminary feasibility assessment of 400 kV Cable extension beyond Ormiston Road - November 2005

400 kV Underground Cable Reports - An Overview - March 2005

An International Survey of Reasons for Undergrounding Transmission Lines - March 2005

Comparison of the Reliability of a 400 kV Underground Cable with an Overhead Line for a 200 km Circuit - March 2005

Effect of short cable sections on reliability of a 400 kV Power Cable from Auckland to Whakamaru - March 2005

Factors Affecting the Viability of a 200 km 400 kV Power Cable from Auckland to Whakamaru - February 2005

Preliminary Investigation of Using the Waikato Rivers as a 400,000 Volt Cable Route - February 2005

ACRE Reports

Area Reports

North Island 400 kV Backbone Investigation Project - Environmental Phase 1 - Summary Report - October 2004

Area Study North Island - North Island 400kV - Investigation Project - September 2004

Corridor Reports

Corridor Study North Island - North Island 400kV - Investigation Project - September 2004

Route Reports

Final Report on North End Modifications - February 2007

Interim Report on North End Modifications - October 2006

Final Route Decision Report - July 2005

Final Route Decision Appendix 1 - Route Sections - July 2005

Interim Route Decision Report - May 2005

Interim Route Decision Appendix 1 - Route Sections - May 2005

Route Study North Island - North Island 400kV - Investigation Project - October 2004

Easement Report

Easement Report - January 2006

Dates to go in here

Newsletters

North Island Grid Upgrade Newsletter Issue 1: October 2004

North Island Grid Upgrade Newsletter Issue 2: February 2005

North Island Grid Upgrade Newsletter Issue 3: July 2005

North Island Grid Upgrade Underground Cable Newsletter Issue 1: August 2005

North Island Grid Upgrade Underground Cable Newsletter Issue 2: November 2005

North Island Grid Upgrade Newsletter Issue 4: January 2006

North Island Grid Upgrade Newsletter Issue 5:

North Island Grid Upgrade Newsletter Issue 6: May 2007

Information Sheets

- 1 The need**
 - Issue 1 – October 2004
 - Issue 2 – July 2005
 - Issue 3 – October 2006

- 2 **Are there alternatives?**
Issue 1 – October 2004
Issue 2 – July 2005
Issue 3 – October 2006

- 3 **Selecting the Route/Deciding where to put the proposed transmission line**
Issue 1 – October 2004
Issue 2 – July 2005
Issue 3 – October 2006

- 4 **What will the line look like?**
Issue 1 – October 2004
Issue 2 – July 2005

- 5 **Undergrounding high voltage cables**
Issue 1 – October 2004
Issue 2 – November 2005
Issue 3 – February 2007

- 6 **Electric & Magnetic Fields/Electric & Magnetic Fields and noise**
Issue 1 – October 2004
Issue 2 – July 2005
Issue 3 – November 2005
Issue 4 – October 2006

- 7 **Property matters**
Issue 1 – October 2004
Issue 2 – July 2005

- 8 **Property matters and compensation**
Issue 1 – January 2006
Issue 2 – October 2006

- 8 **Resource Management Act (RMA) processes**
Issue 1 – October 2004
Issue 2 – July 2005
Issue 3 – January 2006
Issue 4 – October 2006

- 9 **Consultation**
Issue 1 – October 2004
Issue 2 – July 2005

- 10 **The Electricity Commission**
Issue 1 – October 2004
Issue 2 – July 2005

- 11 **Will my power bill go up?**
Issue 1 – October 2004
Issue 2 – July 2005

- 12 **Traffic Management during construction of the proposed 400 kV transmission line**
Issue 1 – August 2005
Issue 2 – November 2005

- 13 400 kV underground cable section**
Issue 1 – August 2005
Issue 2 – November 2005
- 14 Substation equipment for the proposed 400 kV transmission line**
Issue 1 – August 2005
Issue 2 – November 2005
- 15 Amended proposal and Brownhill Road**
Issue 1 – October 2006
- 16 Amended proposal and Pakuranga substation**
Issue 1 – October 2006
- 17 Interim Decision on the Preferred Route**
Issue 1 – May 2005

Amended Proposal Documents

In October 2006, Transpower submitted an Amended North Island Grid Upgrade Investment Proposal to the Electricity Commission that replaced the Grid Upgrade Plan Volume 2 in part.

North Island Grid Upgrade Project Amended Proposal - October 2006

At a Glance - Transpower's Amended North Island Upgrade Proposal - October 2006

Transpower's Amended North Island Upgrade Proposal - Transpower Overview - October 2006

Amended Proposal Attachments

Attachment A - Diversity into the Upper North Island

Attachment B - Treatment of the Arapuni-Pakuranga Line

Attachment C - Project Delivery Risk

Attachment D - Technical Assessment of Modified Options

Attachment E - Economic Assessment of the North Island Grid Upgrade Project

Attachment F - Costing Report

Attachment G - High Temperature Conductor Report

Attachment H1 - Timing of Auckland Grid Supply Upgrade

Attachment H2 - Pre-Augmentation EUE Assessment

Attachment I - Otahuhu-Whakamaru A&B Duplexing Report

Attachment J - Assumptions List

Attachment K - Economic Analysis of Non-Transmission Alternatives

Attachment L - Discount Rate for Grid Investment Test

Attachment M - Assessment of the Value of Unserved Energy

Attachment N - Foreign Direct Investments

Original Proposal Documents

Investment Proposal Synopsis - North Island Upgrade Project - July 2005

Investment Proposal - North Island Upgrade Project - May 2005

North Island RFI - September 2004

APPENDIX 3

The 26 themes used in the analysis of submission on the Interim Decision were as follows:

- Alternatives
- Civil liberties - abuse of rights
- Compensation
- Construction issues
- Consultation
- Design
- Development planning
- Easement
- Ecology/environment
- Economic/financial effects including property values
- Expectations - retirement planning
- Existing infrastructure including line maintenance
- Health
- Heritage
- Land use
- Maori interests
- Need
- Noise
- No topics
- Project economics
- Other Property issues
- Regulatory issues
- Route selection
- Safety
- Social effects

- Visual

These 26 themes represented an amalgamation of 96 topics:

- Alternatives not properly considered
- Alternatives unspecified (must be)
- Civil liberties - abuse of rights
- Compensation - inadequate process
- Compensation - inadequate provision
- Compensation - restriction to easement
- Consultation - cost of advice
- Consultation - information
- Consultation - process
- Consultation - submission period
- Construction issues
- Design - alternate tower design
- Design - lower towers
- Development planning issues
- Easement issues - rental vs lump sum/future values inadequately addressed
- Easement issues - width
- Easement issues - other
- Ecology /Environment
- Economic effects - airstrip
- Economic effects - development constraints
- Economic effects - farming operations
- Economic effects - forestry
- Economic effects - multiplier
- Economic effects - other
- Economic effects - subdivision potential
- Economic effects - telecommunications compromised

- Economic effects - tourism and recreation
- Energy efficiency
- Expectations - retirement planning
- Existing Infrastructure - cumulative effects
- Existing Infrastructure - compensation
- Existing Infrastructure - contractor damage
- Existing Infrastructure - effects
- Existing Infrastructure - failure to plan/develop grid
- Existing Infrastructure - noise
- Existing Infrastructure - OTA-WHK upgrade
- Existing Infrastructure - safety
- Existing Infrastructure - use AP route
- Financial effects
- Health
- Impact on heritage values
- Intended non-cooperation
- Land use
- Line maintenance
- Maori interests
- Need - e3P enough
- Need - demand forecast challenged
- Need - low utilisation
- Need - source of power
- Noise
- Non-transmission alternatives - coal
- Non-transmission alternatives - decentralisation
- Non-transmission alternatives - domestic gas in AKL
- Non-transmission alternatives - gas
- Non-transmission alternatives- hydro

- Non-transmission alternatives- multi-fuel
- Non-transmission alternatives - nuclear
- Non-transmission alternatives - other
- Non-transmission alternatives - peaking plant in AKL
- Non-transmission alternatives - rubbish
- Non-transmission alternatives - solar
- Non-transmission alternatives - unspecified generation close to demand/in Auckland
- Non-transmission alternatives - wind
- No topic/oral submission
- Project economics - cost not important
- Project economics - cost distribution
- Project economics - information disclosure
- Project economics - manipulated
- Property - avoiding Crown/Maori land
- Property - small block
- Property values
- Regulatory issues
- Route selection - lack of option
- Route selection - process criticised
- Route selection - security of supply issues with corridor
- Route selection - use AP line
- Route selection - vary route
- Safety - personal
- Safety - horses
- Safety - aircraft
- Social effects - community disruption/people leaving etc
- Social effects - community infrastructure
- Social effects - dividing communities

- Social effects - lifestyle
- Social effects - stress
- Transmission alternatives - HVDC
- Transmission alternatives - Kaimais
- Transmission alternatives - rail
- Transmission alternatives - road
- Transmission alternatives - underground full length
- Transmission alternatives - underground locality
- Transmission alternatives - underground unspecified
- Transmission alternatives - undersea
- Transmission alternatives - upgrade existing lines
- Transmission alternatives - Waikato River
- Visual