

Before a Board of Inquiry
Transmission Gully
Notices of Requirement and Consents

under: the Resource Management Act 1991

in the matter of: Notices of requirement for designations and resource consent applications by the NZ Transport Agency, Porirua City Council and Transpower New Zealand Limited for the Transmission Gully Proposal

between: **NZ Transport Agency**
Requiring Authority and Applicant

and: **Porirua City Council**
Local Authority and Applicant

and: **Transpower New Zealand Limited**
Applicant

Statement of rebuttal evidence of Gavin Craig Lister (Landscape and Visual) for the NZ Transport Agency, Porirua City Council and Transpower New Zealand Limited

Dated: 19 January 2012

REFERENCE: John Hassan (john.hassan@chapmantripp.com)
Nicky McIndoe (nicky.mcindoe@chapmantripp.com)

**STATEMENT OF REBUTTAL EVIDENCE OF GAVIN CRAIG
LISTER FOR THE NZ TRANSPORT AGENCY, PORIRUA CITY
COUNCIL AND TRANSPOWER NEW ZEALAND LIMITED**

INTRODUCTION

- 1 My full name is Gavin Craig Lister.
- 2 I have the qualifications and experience set out at paragraph 2 of my statement of evidence in chief, dated 17 November 2011 (*EIC*).
- 3 I repeat the confirmation given in my EIC that I have read, and agree to comply with, the Code of Conduct for Expert Witnesses (Consolidated Practice Note 2011).
- 4 In this statement of rebuttal evidence, I:
 - 4.1 Respond to the evidence of:
 - (a) Ms Sally Barbara Peake, on behalf of Kapiti Coast District Council (*KCDC*);
 - (b) Ms Emily Jane Thomson, on behalf of *KCDC*;
 - (c) Mr John Christopher Horne, on behalf of the Rational Transport Society Inc;
 - (d) Mr Kevin Walter Gywnn, on behalf of Mana Cycle Group, and
 - 4.2 Respond to the section 42A report – Part 1, provided by Mr John Kyle (*the section 42A report*).
- 5 The fact that this rebuttal statement does not respond to every matter raised in the evidence of submitter witnesses within my area of expertise should not be taken as acceptance of the matters raised. Rather, I rely on my EIC and this rebuttal statement to set out my opinion on what I consider to be the key landscape and visual matters for this hearing.
- 6 Consistent with my EIC, in this statement of evidence when referring collectively to the NZ Transport Agency (*the NZTA*) Project¹, the Porirua City Council (*PCC*) Project² and the Transpower

¹ The 'NZTA Project' refers to the construction, operation and maintenance of the Main Alignment and the Kenepuru Link Road by the NZTA.

² The 'PCC Project' refers to the construction, operation and maintenance of the Porirua Link Roads (being the Whitby Link Road and the Waitangirua Link Road) by PCC.

New Zealand Limited (*Transpower*) Project³ I will use the term "Transmission Gully Proposal" (and hereafter, *the Proposal*).

- 7 I will refer to the NZTA Project and the PCC Project collectively as the "Transmission Gully Project" (and hereafter, *the TGP* or *the Project*).

SUMMARY OF EVIDENCE

- 8 I have read the evidence provided by submitters relevant to landscape and visual matters and the relevant parts of the section 42A report. As a result I recommend changes to conditions and/or the principles in the Urban and Landscape Design Framework (*ULDF*) in respect of:

- (a) Construction of the access path in the Te Puka and Horokiri valleys;
- (b) Construction and revegetation of earthworks;
- (c) Relationship of the Landscape and Urban Design Management Plan (*LUDMP*) to other management plans;
- (d) Matters to be addressed in the LUDMPs; and
- (e) Criteria for selecting additional spoil disposal sites.

- 9 These items cover matters of detail and process, rather than fundamental issues. I confirm my opinions expressed in my EIC.

EVIDENCE OF SUBMITTERS

Evidence of Ms Sally Peake

- 10 Ms Peake's evidence raises concerns about mitigation measures and whether the proposed conditions will deliver the intended landscape outcomes. I will address each issue raised in turn.

Effects on users of new track

- 11 Ms Peake notes (paragraph 3.3) that I did not assess the effect of the road on users of the access track which is proposed to be constructed parallel to the Main Alignment through the Te Puka and Horokiri Valleys.

Response: The reason is that the track's primary purpose is to provide permanent access to the transmission line. Public access

³ The 'Transpower Project' refers to the relocation of parts of the PKK-TKR A 110kV electricity transmission line between MacKays Crossing and Pauatahanui Substation by Transpower.

was subsequently offered by the NZTA as a recreational benefit to connect Battle Hill Farm Forest Park (BHFFP) with Queen Elizabeth Park at the north end of the Project. However, to maximise the recreational benefit I suggest that the following principle be added to the ULDF under the heading 'Pedestrian and cycle links design principles'. This principle would be given force by existing condition NZTA 46 which requires the preparation of a LUDMP that is consistent with the ULDF:

Enhancing the experience of future recreational users should be taken into account in the detailed design and alignment of the permanent access track in Te Puka and Horokiri valleys, and in the design of revegetation of the valleys and restoration of Te Puka Stream.

Design Principles for Reinforced Soil Embankments

- 12 Ms Peake considers (paragraph 5.3) that the principles in the ULDF have not been spelled out clearly enough regarding the design intent of a "highly sculptured aesthetic form" to the steep reinforced soil embankments (RSE)⁴ below the road, and she notes (paragraph 5.7) that the drainage 'cascades' might detract from the RSE.

Response: As Ms Peake points out, the design intent of the RSE fill batters are outlined on page 65 of the ULDF. I recommend adding the following principles under the heading 'Fill Batters – Steep Topography' on that page of the ULDF to further clarify the design intent, stress the importance of landscape design input to the detailing of this feature, and address the issue of the drainage structures:

The reinforced soil embankments (RSE) in Te Puka Stream valley should be constructed with a smooth face so as to accentuate the road formation as a curvilinear sculptural feature. The face should be vegetated in a consistent sward of grass or similar low vegetation such as fern;

The RSE batters and associated structures in Te Puka valley require particular landscape architectural and urban design input given their scale and the sensitivity of this location. The engineer, ecologist and landscape architect should work together to design the final shape and re-vegetation for these batters and associated works during the detailed design process;

⁴ I note that the term "Mechanically Stabilised Slope" (MSS) is used in the ULDF and the term "Mechanically Stabilised Earth" (MSE) in the landscape caucusing statement, dated 12 December 2011. I understand that when referring to earthworks in the Te Puka Stream Valley the correct term to use is "Reinforced Soil Embankment" (RSE).

Drainage structures built on the RSE batters should be integrated with the slope and designed to a high level of amenity.

Design Principles for Cut Batters

- 13 Ms Peake (paragraphs 5.5, 5.6 and 5.7) maintains that the differences between the 'sculptural' design approach proposed for the RSE fill batters and the 'naturalistic' approach proposed for the cut batters, and also for Te Puka Valley and stream, are not sufficiently articulated or differentiated in the conditions.

Response:

- 13.1 The design principles are described in the ULDF which is then linked to conditions (i.e. through designation condition NZTA 46, 48aa and PCC 28), rather than reproduced in the conditions themselves.
- 13.2 The landscape design should be seen in conjunction with the ecology works. These works have been coordinated during design because of the overlap between the disciplines. The rehabilitation of Te Puka Stream and the revegetation of the Te Puka valley falls within the ecology work-stream and is addressed in **Mr Fuller's** evidence. In summary, the stream is to be reconstructed to be naturalistic in function and appearance. Similarly the revegetation of the valley will be naturalistic – the valley as a whole will be retired with enrichment planting carried out along watercourses.
- 13.3 The cut and fill batters are covered by separate principles in the ULDF. Cut batters will be benched (for safety reasons) and therefore will not appear naturalistic, but the intent is to soften their appearance as far as possible. To further clarify the design intent and provide additional detail I recommend replacing the principles under the heading 'Cut Batters – Steep Topography' on pages 31 and 65 of the ULDF with the following revised principles:

The engineer, ecologist and landscape architect should work together to design the final shape and re-vegetation for cut batters and associated earthworks during the detailed design process;

The large cut batters should be rehabilitated to soften and naturalise their appearance as far as possible bearing in mind the requirement for benching for safety reasons;

Align benches consistently horizontally, and where possible match bench levels between adjacent cut batters;

Increase the height of the step to the first bench to a maximum 15m;

Grade back the slopes at the top of batters to avoid short benches high on such batters;

Grade soil and subsoil back from the perimeter of cut batters to avoid frittering;

Create irregular and rounded outer edges to benches to soften sharp edges;

Soften and naturalise the face as far as possible through such details as shaped corners, gully like features and scree-like slopes. Where stable hard rock is encountered it may be preferable to retain it un-vegetated as a naturalistic feature;

Roughen and scarify cut batter faces to create micro-habitats for vegetation, and to soften the appearance of the batters;

Promote a vegetation cover through hydro-seeding batter faces, using best practice techniques and tailoring techniques to specific locations. Techniques may include use of staged applications (initial followed by enrichment application), tailoring species to situation (including the use of trials in the route area and use of hydro-moss and lichen), use of glue matrices to improve adhesion to faces, monitoring results and taking remedial action where necessary;

Plant benches with native shrub species suitable for the conditions.

Hydro-seeding of cut batters

- 14 Ms Peake (paragraph 5.4) raises concerns about what she says are unproven hydro-seeding techniques and the proposed use of trialling and testing.

Response: Hydro-seeding is an established technique and the only practical method for re-vegetating such large and steep cut batter slopes. The term "trials" that I used in my EIC (paragraph 137) might be more fully described as an 'adaptive approach' entailing trials, monitoring and fine-tuning of the techniques as the work proceeds. The approach was discussed with RST Environmental Solutions Ltd, the company regarded as New Zealand's leader in such hydro-seeding techniques. The techniques which are likely to be used for the Project include staged applications (enrichment application once a biological layer has established), use of moss, lichen and grasses for initial cover, glued matrices, adapting the species mix to particular sites depending on exposure and substrate (including trials within the route area), and input to the finishing of

the cut faces to maximise micro-habitats. The revised ULDF principles recommended in paragraph 13.3 above cover such matters.

Relationship of LUDMP to other Plans

- 15 Ms Peake (paragraph 6.3) supports the requirement for a LUDMP but proposes that it should guide other technical documents and be prepared prior to the Construction Environmental Management Plans (CEMPs), and Site Specific Environmental Management Plans (SSEMPs). She is also concerned (paragraph 5.8) that the engineering diagrams in the draft SSEMP for Te Puka valley (which illustrate an “unnatural linear” cross-section) indicate that the final result will be an ‘engineered outcome’, reinforced by a statement in the SSEMP that there are no specific landscape and visual issues for that area.

Response:

- 15.1 I agree that landscape and urban design matters should be part-and-parcel of the detail design. That is the intent of the ULDF and proposed LUDMP. However, while it is in the interest of the NZTA (and PCC) to develop the Project so there is no conflict between the component parts, the different management plans serve different purposes. The SSEMPs, for instance, are designed primarily to address regional consent issues by bringing erosion and sediment controls, ecology and the road design together. In my view the issue raised by Ms Peake could be most efficiently addressed by clarifying those matters which the LUDMP would have input to, which I address further under the following heading.
- 15.2 I also agree that the reference to there being no landscape and visual issues in Te Puka valley should be removed from the SSEMP. (By way of explanation I understand it originated from the fact that for practical reasons the revegetation in this part of the Proposal was assigned to the ecology work-stream, rather than the landscape work stream). I also understand that the engineering diagrams included in the draft SSEMP are intended to illustrate constructability, and are not intended to illustrate finished sections.

Matters to be included in LUDMP

- 16 Ms Peake (paragraph 6.4) considers the matters to be included in the LUDMP should be broadened to include the “overall appearance of earthworks, including location and extent of benches, design and appearance of streams and structures, planting design (in conjunction with ecological requirements), and location and design of road furniture”.

Response:

I agree with Ms Peake with some qualifications:

- 16.1 Certainly the intent of the conditions is to ensure landscape and urban design input to the earthworks, structures and planting design in the manner she suggests. Accordingly, I have proposed some changes in wording to NZTA 47 and PCC 29 (i.e. to the contents of the LUDMP) which are outlined below and which I consider would further clarify the situation.
- 16.2 Similarly, I support landscape input to the streams. But, as noted elsewhere, while some riparian planting falls within the landscape 'work-stream', most of it falls within the ecology 'work-stream'. To date this work has been coordinated. I have proposed a specific amendment to the LUDMP conditions to ensure this remains the case (outlined below).
- 16.3 I also support landscape and urban design input into the design of the suite of 'highway furniture' (signs, barriers, lights etc). However I accept that flexibility needs to be retained to respond to future circumstances and changes in standards, given that safety is the paramount concern. Therefore I consider guidelines are the appropriate approach (rather than specifying standards in "enforceable conditions") and that this purpose is served by the 'Highway furniture principles' on pages 44 and 45 of the ULDF.
- 16.4 Accordingly, in light of those comments, I propose that NZTA 47 and PCC 29 should be amended as follows:

All LUDMP(s) shall provide for:

- *Integration of the Project's permanent works into the surrounding landscape including;*
 - *Input to earthworks contouring including cut and fill batters, benching, and spoil disposal sites;*
 - *Input to the appearance of all major structures, including bridges, RSE batters, MSE walls, noise barriers, drainage structures;*
 - *Guidelines for the suite of highway furniture such as barriers, gantries, sign posts, lighting standards, etc.,*
 - *Input to the appearance of stream diversions and permanent stormwater control ponds;*
 - *Landscape mitigation planting;*

- *Visual mitigation planting within the land acquired for the Project which mitigate the effects of the Project on properties in the vicinity of the alignment;*
- *Coordination of landscape works with ecology works.*

16.5 I also consider NZTA 48(b)(i)⁵ and PCC 30(b)(i) should be amended as follows (to ensure adjacent vegetation is properly managed through the LUDMP):

Identification and protection measures for vegetation to be retained, and make good planting along cleared edges

Planting Staging

17 Ms Peake (paragraph 6.5) seeks more detail on timing of planting and says consideration should be given to staging.

Response: Designation conditions NZTA 48 & PCC 30 already require a planting and staging programme and designation conditions NZTA 50 & PCC 32 already require planting to be carried out in the first planting season following construction of the relevant section of the works. In other words the planting will follow along as the works progress.

Transpower Issues: Alignment of transmission line at Tower 2A

18 Ms Peake (paragraph 4.19) considers alternative alignments and tower locations have not been sufficiently considered in the vicinity of Tower 2A at the northern end of Transmission Gully with regards effects on future users of the highway, and on the surrounding area and the Outstanding Natural Landscape (ONL). She also mentions (paragraph 4.22) the possibility of placing this section of the line underground.

Response:

18.1 I accept there will be some adverse visual effects from Tower 2A on future users of the proposed highway taking into account that it is a gateway to the Kapiti Coast. Effects on the surrounding area and ONL, though, will be small given that it is a modified setting outside the ONL and that Tower 2 already exists.

18.2 I looked carefully at the proposed alternative of re-locating Tower 2 to the opposite side of the road and explained in my

⁵ This is now condition NZTA 48b(ii)(a) in the conditions attached to Ms Rickard's rebuttal evidence.

EIC (paragraph 143) why I do not consider it would reduce adverse effects. It would introduce an additional angle, or zig-zag, to the line. While it would remove Tower 2A from a prominent location on the outside of a bend, I understand from **Ms Yorke** that shifting it to the higher location on the inside of the bend would require either a heavier and much taller replacement for Tower 1 or an additional tower on the western side of the road between Towers 1 and 2A. The new tower on the eastern side of the road would also be more prominent from two houses on the hill east of the line.

- 18.3 Placing the line underground would eliminate the visual effects at this location (although there would be some additional visual effects resulting from the termination stations adjacent to the towers at either end of the underground section). I have considered the reasons in **Ms Yorke's** evidence as to why undergrounding was not pursued. I do not consider the degree of visual effects is such that it would justify such action.

Updated photomontage of Tower 2A

- 19 Since the preparation of my EIC, I have noticed an error in the location of the road and Tower 2A in the photomontage from Viewpoint 1 (i.e. LA 25-28). The photomontage has now been corrected and also updated with a new photo showing recent changes in the vegetation in this area (see **Appendix A**).

Overall

- 20 Ms Peake's overall concerns (as summed up in paragraphs 6.1 and 6.2) appear to be that the design is not detailed enough, the conditions not prescriptive enough, and the design intent of the ULDF might be lost during the detail design process.

Response:

- 20.1 Detail design is still to be carried out, of course, and will be subject to an Outline Plan of Works approval. However, I consider the design and resolution of issues is comparatively advanced for Notices of Requirement.
- 20.2 I agree that on-going landscape and urban design input is important to ensure the design intent is carried through to the finished outcome. In my opinion linking the ULDF to the conditions is a useful device to ensure this happens. It provides a level of detail, while also providing guidance to further enhance the design during the detail design process. It also provides a benchmark against which the LUDMP can be assessed at the Outline Plan approval stage.

20.3 I consider the recommended changes to the ULDF and conditions address most of the issues raised in Ms Peake's evidence.

Evidence of Emily Jane Thomson

Planting adjacent to Transpower towers

- 21 Ms Thomson (paragraph 9.8) recommends a condition that would require planting for visual mitigation adjacent to Towers 2A, 3A, 9A, 10A and 11A, to minimise visual effects when viewed from existing residential dwellings and public open spaces (including roads and tracks).

Response: I accept that extending the proposed revegetation in the vicinity of Towers 2A and 3A would have some minor benefits for future users of the road (this is best dealt with by minor adjustments to the revegetation plan) although little benefit for views from existing residential dwellings, roads, tracks, or public open spaces. Towers 9A-11A are located on wind-swept spurs on pasture covered hills and any planting would be counterproductive, if anything serving to draw attention to and emphasise the towers particularly in long distance views. I note that Ms Peake does not recommend such an approach in her evidence.

Evidence of John Horne

- 22 Mr Horne's evidence focuses on amenity and severance effects of the Project on users of Belmont Regional Park (BRP) and BHFFP, and recommends either footbridges or underpasses be provided for the exclusive use of recreational users.

Response: I acknowledge the amenity effects on users of the parks, which are described in my EIC (paragraphs 77-83). The Management Plans of both parks anticipate the 'Transmission Gully project'. Measures were incorporated into the landscape plans to address such amenity effects. **Ms Hancock** addresses severance effects in her rebuttal evidence, and I understand all existing tracks will be retained (albeit with some re-alignment) and that an additional connection will be provided by way of the access track between BHFFP and the northern end of the Project adjacent to Queen Elizabeth Park. In terms of amenity the proposed alignment of the tracks parallel to streams under bridges (such as at bridges 18 & 19) generally provides a more open and attractive route than a 'tunnel' underpass.

Evidence of Kevin Gywnn

- 23 Mr Gywnn's evidence concerns effects of the Project on mountain-bike users of BRP and BHFFP. He says (paragraphs 28, 29) that Technical Report 23 (ULDF) prioritises the visual amenity of future road users and does not address mitigation measures for users of BRP, and similarly (paragraph 42) for users of BHFFP. In both instances he proposes planting of native species along the

immediate corridor of the road.

Response: Landscape mitigation is addressed in Technical Report 5, the Landscape Plans LA01-21, and the ULDF. The planting described in these documents is designed to achieve a number of purposes, including mitigating visual effects for park users.

23.1 With respect to BRP, native planting is proposed (Landscape Plan LA17) along the tracks as they approach the highway beneath bridges 18 and 19, and at the fill batter north of bridge 19 where the road would be prominent from the track. (Beneath bridge 20 the track will be within existing native vegetation). Planting is not proposed in relation to other locations because of the desire to integrate the road with existing landscape patterns (rather than to wall it off), and because views of the road from other parts of the track close to the highway will be partly screened by topography. For instance from the section of track between bridge 19 and 20 the road will be in box cutting and the track will be below the slope.

23.2 With respect to BHFFP, woodland planting is proposed (Landscape Plan LA08) to enclose the track on the approaches to the underpass (bridge 7) (the woodland type being selected to be in keeping with the BHFFP Sustainable Management Plan). Planting also includes additional stands of woodland adjacent to the eastern side of the highway, woodland near the stream, and native riparian planting along the stream. Such a design is intended to achieve several purposes for different users. It will integrate the road within the landscape patterns (rather than create a 'green wall'), accentuate the natural landscape pattern of the stream, soften visual effects for track users, have ecological benefit, and enhance the experience for future road users.

SECTION 42A REPORT

24 The section 42A report raises one question relevant to landscape matters, and two issues relating to the completeness of conditions.

St Joseph's Church Amenity Planting

25 The report (page 58, 5th paragraph) raises the question of screen planting earlier offered for St Joseph's Church.

Response: Such planting is no longer proposed. Rather, it is considered better to maintain open views to and from the Church (between the existing macrocarpas) and to rely on the planting within the designation to soften the highway. I also note that the New Zealand Historic Places Trust did not favour screen planting.

Fill Disposal Site Criteria

- 26 The report states (page 41, 3rd paragraph and page 78, 2nd paragraph) that, although fill disposal sites have been earmarked, their location will be confirmed during detail design and therefore criteria for selecting alternative fill disposal sites should be included in the conditions.

Response: I understand the possibility of large fill sites being located outside of the areas identified in the application is small, as the current understanding of the cut fill balance has located fill sites optimally. For these reason other sites selected as suitable were discarded as superfluous. However I support including selection criteria should alternatives be required for whatever reason. Suitable criteria are included on page 32 of the ULDF.

Lanes Flat Landscape and Ecological Restoration

- 27 On page 78 (1st paragraph) the report recommends that the restoration of Lanes Flat be included specifically in the conditions because it is considered an important component of the mitigation proposed.

Response: This is already covered by designation condition NZTA 46 which requires the LUDMP to be prepared in accordance with the ULDF. I recommended in paragraph 114 of my EIC that this condition (and its equivalent, PCC 28) be modified to refer directly to the Landscape Plans (LA01-LA21) to provide certainty of their status. Plan LA13 shows the proposed restoration of Lanes Flat (I note that the designation boundary was aligned specifically to include this area).

Gavin Craig Lister
19 January 2012