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

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*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 evidence of Gavin Craig Lister (Landscape and visual) for the NZ Transport Agency, Porirua City Council and Transpower New Zealand Limited.

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

**QUALIFICATIONS AND EXPERIENCE**

1 My full name is Gavin Craig Lister.

2 I am a director of Isthmus, a New Zealand-wide practice specialising in landscape architecture and urban design. I have the following relevant qualifications and experience:

2.1 I have a Bachelor of Arts from the University of Auckland; a Post-Graduate Diploma in Landscape Architecture from the University of Canterbury (Lincoln College); and a Masters of Urban Design from the University of Sydney;

2.2 I am a registered member and a Fellow of the New Zealand Institute of Landscape Architects (*NZILA*) and have recieved 10 awards from the Institute for a range of projects. I have completed the 'Making Good Decisions' accreditation course, and regularly provide evidence to Council hearings, the Environment Court and Boards of Inquiry;

2.3 I have twenty-three years experience as a landscape architect during which I have been involved with a wide range of projects throughout New Zealand, including:

(a) landscape assessments for district plan provisions and structure plans, including identification of outstanding natural features and landscapes;

(b) parks and reserves planning and design;

(c) city and town centre public space and streetscape design projects;

(d) urban and rural land development projects; and

(e) infrastructure projects.

2.4 My experience in infrastructure projects includes:

(a) the Transpower New Zealand Limited 400kV capable North Island Grid Upgrade Project, for which I was part of the route selection team, prepared the landscape and visual assessments, and provided evidence to the Board of Inquiry;

(b) the Tauhara II and Poihipi Geothermal Power Projects;

(c) the Arnold River hydro-electric project;

(d) a number of wind farm projects including the proposed Motorimu Wind Farm, Hauauru ma raki Wind Farm, Waitahora Wind Farm, and the three wind farm projects on the Maungaharuru-Te Waka Range;

(e) Central Motorway Junction in Auckland, for which I prepared the landscape and visual input to the Scheme Assessment phase for the then Transit New Zealand;

(f) the Waitemata Second Harbour Crossing for which I carried out the landscape and urban design section of the Options study;

(g) the Notice of Requirement for the Ohinewai-Gordonton deviation of SH1 (the 'Huntly Bypass') for which I prepared a peer review for Waikato District Council;

(h) the 'Waterview Connection Project' for which I prepared a peer review for the Environmental Protection Authority (*EPA*); and

(i) the Otaki to North of Levin Road of National Significance for which I am currently involved in the route selection process.

3 On 15 August 2011 the NZ Transport Agency (*NZTA)*, Porirua City Council (*PCC)* and Transpower New Zealand Limited *(Transpower)* lodged Notices of Requirement (*NoRs)* and applications for resource consent with the EPA in relation to the Transmission Gully Proposal (*the Proposal*).

4 The Proposal comprises three individual projects, being:

4.1 The 'NZTA Project', which refers to the construction, operation and maintenance of the Main Alignment and the Kenepuru Link Road by the NZTA;

4.2 The 'PCC Project' which refers to the construction, operation and maintenance of the Porirua Link Roads by PCC[1]; and

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

My evidence is given in support of all three projects. For the purposes of referring to the NZTA Project and the PCC Project

[1] The Porirua Link Roads are the Whitby Link Road and the Waitangirua Link Road.

collectively in this evidence, I will use the term "Transmission Gully Project" (and hereafter *the TGP* or *the Project*).

5 I am familiar with the Proposal area.

6 I am the author of the Landscape and Visual Assessment (Technical Report 5) which formed part of the Assessment of Environmental Effects (*AEE)* lodged in support of the Project. I am also the author of Technical Report 5A: Addendum to Landscape and Visual Effects Assessment lodged in support of the Transpower Project.

7 I have read the Code of Conduct for Expert Witnesses as contained in the Environment Court Consolidated Practice Note (2011), and I agree to comply with it as if this Inquiry were before the Environment Court. My qualifications as an expert are set out above. I confirm that the issues addressed in this brief of evidence are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

**SCOPE OF EVIDENCE**

8 My evidence summarises material described in further detail in the Landscape and Visual Assessment. I will deal with the following:

8.1 Summary of conclusions;

8.2 Role and methodology in relation to the Proposal;

8.3 Existing landscape of the Proposal area;

8.4 Actual and potential landscape and visual effects;

8.5 Recommended measures to avoid, remedy and mitigate adverse landscape effects;

8.6 Conditions; and

8.7 Response to submissions.

## SUMMARY OF CONCLUSIONS

9 A project of this type and scale will inevitably have some adverse landscape and visual effects. In this case the most significant adverse effects will include the natural character impacts within the steep and narrow Te Puka Stream valley; the visual effects of the large cut and fill batters required in parts of the route because of the steep topography; and the change in landscape character because the road will be aligned through a greenfields landscape.

10 The natural character of the affected streams and their margins will not be fully preserved in terms of section 6(a) of the Resource Management Act 1991 (*RMA*), which is an inevitable consequence of aligning a major new road along such rural valleys. However, the effects have been avoided or reduced as far as practicable taking into account the nature of the Project, and in my view appropriate landscape measures have been proposed to remedy and mitigate the remaining effects. For these reasons in my view the Project can be considered appropriate in terms of section 6(a) with regards landscape aspects of natural character.

11 The only Outstanding Natural Landscape (*ONL*) affected by the Proposal is the 'foothills of the Tararua Ranges', which includes Te Puka Stream valley. In my opinion the Project can be considered appropriate in terms of section 6(b) because the effects on what I consider to be the main landscape values of the ONL (the hill backdrop to the plains) will be reasonably low.

12 I consider that landscape aspects of amenity values and quality of the environment will be properly maintained in terms of sections 7(c) and 7(f) in the context of a project of this nature: the effects have been avoided where possible, the remaining effects will be acceptable, adequately remedied and mitigated, and in some instances there will be positive effects on amenity and environmental quality.

13 Adverse effects of the Transpower Project (i.e. changes to the existing PKK-TKR A transmission line) on the existing environment will be relatively small in most instances, with the main exception being the proposed four-span bypass deviation at Wainui Saddle, which is in an area classified as an ONL. In my opinion the deviation can be considered appropriate in terms of section 6(b) because the ONL is already traversed by the existing transmission line, the selected bypass deviation is the best of the options considered and was aligned to reduce potential adverse effects, and the degree of adverse landscape effects will be moderate in degree.

## ROLE AND METHODOLOGY

14 Isthmus was engaged to provide landscape input into the Project design, and prepare the landscape and visual assessment for the AEE. I led the Isthmus team who undertook this work.

15 The landscape methodology, which was submitted for peer review at the commencement of the Project, is detailed in Appendix 5A of the Landscape and Visual Assessment (Technical Report 5).[2]

16 In summary, I undertook site visits; took part in public open days; took part in the design team workshops which refined details of the alignment and road design; and led the landscape design component of the Project. The landscape design was done in collaboration with other disciplines, principally civil and structural engineering, ecology, hydrology and urban design. I subsequently wrote the landscape and visual assessment and provided input to the proposed conditions.

17 I was assisted by others in my company, principally Mr Wade Robertson, who prepared the inventory of effects from individual properties, carried out site visits in addition to those carried out by me, undertook consultation with owners of some affected properties, and assisted in the design process.

18 I also provided input to the Transpower Project. I provided best practice principles for transmission line design, provided a baseline assessment of the existing landscape, identified landscape constraints, provided input to selection of alignment options, and led the team which developed the landscape mitigation measures. I wrote the landscape and visual assessment for the Transpower Project (Techncial Report 5A).

## EXISTING LANDSCAPE OF THE PROPOSAL AREA

19 The landscape in the area is characterised by ranges of steep hills separated by fault-line valleys more or less on a NE-SW orientation (for example Te Puka Stream, upper Horokiri Stream and Duck Creek). There is a secondary pattern of north-south splinter fault valleys (for example most of Horokiri Stream and Ration Stream valleys) and folds which form the Porirua Harbour basin.

20 The Main Alignment responds to this geomorphic pattern by following the valleys of Te Puka Stream, Horokiri Stream, Ration Stream and Duck Creek before swinging around the south side of the Porirua Basin.

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[2] Technical Report 5, Landscape and Visual Effects Assessment, page 76.

21 Approximately two-thirds of the Project route traverses catchments which converge on Pauatahanui Inlet. The southern-most end of the Project traverses the catchment of the Onepoto Arm of Porirua Harbour. Only the northernmost 5km of the Main Alignment does not traverse catchments flowing toward Porirua Harbour. Instead the Te Puka Steam, Wainui Stream and Whareroa Stream flow NW across the coastal plain to mouths north of Paekakariki.

22 The Project mostly traverses rural landscapes including relatively natural and sparsely settled pastoral farming, such as in Te Puka Stream, Horokiri Stream and Duck Creek catchments, and lifestyle areas, mainly in the middle part of the Project in the vicinity of Flightys Road, Paekakariki Hill Road, and Bradey Road.

23 While the area would naturally have been mostly forested, it has been cleared in the past and is now mainly exotic pasture and pine plantation. There are occasional remnants of indigenous vegetation (such as pockets of kohekohe forest in Te Puka Stream), areas of regenerating forest (such as at Cannons Creek and Porirua Park Reserve), and areas of former pasture that are in earlier stages of regeneration characterised by gorse, tauhinu, kanuka or mahoe.

24 The southern half of the Main Alignment and the Porirua Link Roads skirt urban Porirua:

(a) Part of the Main Alignment traverses the hill face behind the suburbs of Ranui Heights, Porirua East and Cannons Creek;

(b) The Kenepuru Interchange and the tie-in with existing SH1 is within the Tawa valley urban area at the southern end of the Main Alignment;

(c) The Porirua Link Roads traverse the backdrop hill faces behind parts of the suburbs of Whitby and Waitangirua; and

(d) The remaining part of this section (between SH58 and Cannons Creek) skirts the urban area but is separated by a range of hills.

25 A relevant feature is the existing 110kV lattice tower ('pylon') transmission line from which Transmission Gully takes its name. The Main Alignment follows the transmission line, more or less, between MacKays Crossing and the Pauatahanui substation near the proposed SH58 interchange. The Main Alignment also follows other transmission lines in the Duck Creek area where several lines converge on the Takapu Road substation.

26 The strongest aesthetic characteristics of the area are the expressive landforms: the bold hills, steep escarpments, straight valleys, and relatively natural landscapes. These characteristics are emblematic of the Wellington Region generally and are most evident in the valleys of Te Puka Stream, Horokiri Stream and Duck Creek.

27 It is also relevant to highlight the sharp boundary between the steep hill country traversed by the Proposal and the open, settled plains of the Kapiti Coast immediately to the north of the Project route. The contrast between these landscapes will influence the 'gateway' experience of the route.

28 The other main natural feature of the area is Pauatahanui Inlet which has high ecological significance, is a natural focus for Whitby and Paremata, has significance for tangata whenua, and has high aesthetic value. The Main Alignment is to be located approximately 1km inland of the Inlet. It crosses the head of Lanes Flat, which is an alluvial fan or floodplain above the head of the Inlet.

29 Ngati Toa Rangatira hold mana whenua over the area traversed by the Proposal. I rely on the Cultural Impact Assessment (*CIA*) (Technical Report 18) for this section of my evidence. The CIA states that Porirua Harbour and the adjacent coast was a focus for Ngati Ira who were displaced in the 1820s by Ngati Toa Rangatira, whose rohe was centred on Porirua Harbour and Mana / Kapiti Islands; in essence commanding Cook Strait. The CIA identifies the following landscape features in the vicinity of the route as significant to Ngati Toa Rangatira:

(a) Whareroa Farm area (MacKays Crossing) which was an area of settlement containing Whareroa Pa, urupa and other waahi tapu;

(b) Battle Hill, which was the location of fighting in 1846 between Ngati Toa Rangatira and British troops;

(c) Pauatahanui Inlet, which was a focus of settlement, an important resource, and was associated with a memory of Kawhia Harbour from where the iwi migrated; and

(d) Porirua Harbour, also an important resource and focus of settlement.

**Ms Pomare** discusses the CIA and the sites of significance to Ngati Toa Rangatira further in her evidence.

30 Historical associations with the landscape are mostly focused on Battle Hill, Pauatahanui village, and MacKays Crossing:

30.1 The fighting at Battle Hill was the last engagement in the Wellington region of the New Zealand Wars. When British troops converged on Mataitaua pa (Mataitaua) at Pauatahanui, Te Rangihaeata led a retreat to hastily constructed fortifications on a ridge at Battle Hill, which they defended for several days before withdrawing to the north. The battle site is on a ridge approximately 1km west of the proposed Main Alignment;

30.2 Pauatahanui was subsequently established as a garrison on the site of Mataitaua pa overlooking Pauatahanui Inlet. It became a staging settlement on the main road north from Wellington (Paekakariki Hill Road) with its heyday during the 1870s and 1880s. It was subsequently bypassed by the railway and SH1 both of which adopted the coastal route. Pauatahanui has retained its character as an historical village with a number of historic buildings. The proposed Main Alignment will be located approximately 700m-1km inland of the village; and

30.3 The U.S. Marine Corp established a military camp at MacKays Crossing. The camp was divided into three sections on either side of SH1 and the North Island Main Trunk railway line. The Project does not encroach onto the camp areas and essentially maintains the same spatial relationship between the road and camp locations. However, there is a circular brick fuel storage structure excavated into a terrace in Te Puka Stream valley close to the Main Alignment. I understand it was located away from the camps for safety and camouflage reasons. Although the Main Alignment passes close to the structure, the road will be contained in a box cut within the terrace 'behind' the structure which opens in the opposite direction into Te Puka valley.

31 These sites are discussed further in **Mr Bowman and Ms O'Keeffe's** evidence.

## POTENTIAL LANDSCAPE AND VISUAL EFFECTS

32 The Proposal's main potential landscape and visual effects are:

(a) Effects on natural character of wetlands, rivers and their margins (section 6(a));

(b) Effects on outstanding natural features and landscapes (section 6(b));

(c) Effects on physical features including landforms, streams and vegetation (section 7(f));

(d) Effects on landscape amenity including effects on landscape character and landscape values of the two regional parks (section 7(c));

(e) Effects on historical landscape associations (sections 6(f) and 7(c));

(f) Visual amenity effects from private properties and public places (section 7(c));

(g) Visual amenity effects for future road users (section 7(c)); and

(h) Landscape and visual effects during construction (sections 7(c) and 7(f)).

33 I will now discuss each of these effects.

### Effects on natural character of wetlands, rivers and their margins

34 The main landscape features to which section 6(a) applies are:

(a) Te Puka Stream;

(b) Horokiri Stream;

(c) Ration Stream;

(d) Pauatahanui Stream and Pauatahanui Inlet;

(e) Duck Creek (Waiohata Stream); and

(f) Cannons Creek.

35 The Project will have direct physical effects on streams through works such as culverts and diversions, and through potential run-off, and indirect perceptual effects on their natural character

because of the presence of the road in proximity to the streams. The direct biophysical effects on the streams overlap with ecology and hydrology disciplines and are principally addressed in the evidence of **Mr Fuller**, **Dr Keesing**, **Mr Martell** and **Ms Malcolm**. The following part of my evidence primarily addresses the effects of the Project on perceptual aspects of natural character.

36 **Te Puka Stream** has high natural character, notwithstanding the modified land cover on the western slopes and the presence of the existing transmission line and access track. Te Puka Stream will be piped or diverted during construction and subsequently re-formed in a realigned course. Likewise, the immediate landscape context will be fundamentally changed by the presence of the road and the extensive earthworks required because of the constrained nature of the valley. The existing natural character will obviously not be preserved and there will therefore be 'very high' adverse effects on natural character. The effects will be mitigated by reconstruction of the stream in a naturalistic manner including recreation of the functional aspects of the stream in relation to its ecology, and by proposed retirement of land on the west side of the valley, enrichment planting of regenerating vegetation, and revegetation of tributary streams. These measures are described in **Dr Keesing's** and **Mr Stephen Fuller's** evidence.

37 **Horokiri Stream** also has relatively high natural character. The upper Horokiri has a similar natural character to that of Te Puka Stream, while the middle parts of the valley are more modified and include a consented subdivision. Direct physical effects will be avoided to a large extent by physical separation between the Main Alignment and the parallel course of the stream, although there will be three bridges, seven relatively short sections of diversions, and a number of culverts across tributaries. Nevertheless the Horokiri Stream's landscape context will be fundamentally changed by the presence of the road in the valley. As with Te Puka Stream, the effects on natural character of Horokiri Stream will be mitigated by the proposed retirement of land on the east side of the valley and restoration of riparian vegetation along tributary streams and along the Horokiri Stream itself.

38 **Ration Stream** flows through a relatively modified rural and lifestyle landscape (including roads, dwellings, transmission line) and has only a 'moderate' degree of natural character. Some revegetation, described in **Mr Fuller's** evidence, has been carried out as a condition of the existing designations. The direct physical effects on the stream will be relatively low as the Main Alignment crosses the stream once requiring only a relatively short diversion. It does not run closely parallel with the stream so the effects on perceptual aspects of natural character will also be relatively low. Such effects that do occur will be mitigated by the proposed

extension of the existing revegetation along the tributary headwaters of Ration Stream.

39 **Pauatahanui Stream's** landscape context is likewise relatively modified: Lanes Flat has been drained and converted to pasture, the enclosing hills developed for suburban and lifestyle housing, and the valley is traversed by existing SH58 and transmission lines. There will be some direct alteration of Pauatahanui Stream where the Main Alignment crosses the stream, and the flood plain will be physically modified by the embankment across the valley, the SH58 Interchange, the realignment of SH58 on the flood plain, and the formation of a slightly raised terrace for the main Project Site Compound. However, potential effects will be reduced by the location of the Main Alignment at the head of Lanes Flat, the fact it crosses the valley at right angles, and that bridges are used to cross the stream. The bridge design was substituted for an earlier culvert design, and subsequently refined so that separate bridges are proposed for the Main Alignment and each of the ramps to enable more light to penetrate between the bridges. It is proposed to restore the whole of the balance of Lanes Flat with wetland and natural vegetation, and to extend or restore indigenous vegetation on both sides of the valley. In my view this will represent a significant enhancement and restoration of Lanes Flat that will mitigate the adverse landscape and visual effects of the Project within the valley. Such measures are in keeping with the recommendations of 'Future Focus. A Framework for Pauatahanui Village, Porirua City Council (2009)'.

40 The Main Alignment is to be located approximately 1km inland from the head of **Pauatahanui Inlet** itself and will have no effect on perceptions of the Inlet's natural character. The restoration of Lanes Flat, however, will enhance the broader landscape values of Pauatahanui Inlet because of the connection between Lanes Flat and the nearby wetland reserve at the head of the Inlet.

41 **Duck Creek (Waiohata Stream)** has a relatively high degree of natural character similar to that of Te Puka Stream and the upper Horokiri Stream, although the land cover is modified and the valley contains a Wellington water supply pipeline and gas pipeline access road and transmission lines converging on the Takapu Road Substation. Some revegetation, described in **Mr Fuller's** evidence, has been carried out as a condition of the existing designations. Direct physical effects on the natural character of the stream will be largely avoided; the Main Alignment avoids the main stream except where it bridges the headwaters. Three of the tributary watercourses will be traversed by bridges and three on embankment/culverts. There will however be perceptual effects on natural character because of the presence of the road within the valley. The degree of effect will be less than for Te Puka Stream and Horokiri Stream because the Main Alignment is set further back

from Duck Creek and is embedded in box cuts through tributary spurs (This is illustrated by the photomontages from Viewpoints 9 and 10, discussed further below). The proposed removal of perched culverts and restoration of riparian vegetation along tributary streams will mitigate effects on natural character.

42 The Waitangirua Link Road crosses the lower part of Duck Creek on a large embankment and culvert. The degree of natural character is already reduced in this part of the stream by the adjacent urban development, although works are being undertaken in the lower reaches to restore the stream. There will be a moderate cumulative effect on the existing modified natural character in landscape terms.

43 **Cannons Creek** has high natural character in the vicinity of the Main Alignment (the lower portions of the Creek are more heavily modified through the adjacent urban areas). Although close to urban development, the stream valley is steeply incised and vegetated in a mix of remnant and regenerating vegetation and wilding pines. While the Project will have some effects on natural character, the Main Alignment crosses the stream at right angles, and spans the stream by way of a bridge. There will be some direct physical effects during construction at the bridge site. However the bridge will visually span high across the vegetated gully and therefore will be, in my view, an appropriate means to cross the stream in landscape terms.

44 In summary the natural character of the streams and their margins will not be fully preserved in terms of section 6(a), which is an inevitable consequence of aligning a major new road along such rural valleys. However, the effects have been avoided or reduced as far as practicable taking into account the nature of the Project, and in my view appropriate landscape measures have been proposed to remedy and mitigate the remaining effects.

**Effects on outstanding natural features and landscapes**

45 Section 6(b) is concerned with outstanding natural features or landscapes.

46 There are no classified outstanding features or landscapes (*ONF/ONL*) that are affected by the Project in the Wellington City District Plan, the Upper Hutt City District Plan or the Porirua City District Plan.

47 With respect to the Kapiti Coast District Plan (*KCDP*), the only classified outstanding feature or landscape that is affected by the Project is the 'Foothills of the Tararua Ranges' which is mapped in the KCDP.

48 I note that the KCDP refers to the Foothills of the Tararua Ranges as being an 'outstanding landscape', rather than being an 'outstanding

natural landscape'[3], as per the language of section 6(b) of the RMA. However, it is clear from the associated KCDP text, that the landscapes identified (which include the Foothills) are intended to be categorised in the KCDP for the purposes of section 6(b) of the RMA.[4] Accordingly, I consider it reasonable to interpret the KCDP as categorising the Foothills of the Tararua Ranges as an outstanding natural landscape, for the purposes of section 6(b) of the RMA. Paragraphs 8.1.141 of the Landscape and Visual Effects Assessment and paragraph 25.2.6 of Chapter 25 of the AEE should be read in light of this explanation, as both state that the 'Foothills of the Tararua Ranges' are categorised as an outstanding natural landscape in the KCDP.

49 The 'Foothills of the Tararua Ranges' encompass the extensive hill backdrop to the coastal plains. The landscape values of the ONL are not listed in the KCDP, although a district-wide landscape assessment carried out prior to the District Plan being made operative refers to the hills in mainly visual terms as the "very visible edge between the coastal plain and steep land landscape types"[5]. I consider the main value of the ONL to be the natural backdrop that the hills as a whole provide in contrast to the settled plains, with other values in localised places (such as patches of indigenous vegetation and sites with historical associations).

50 The effects of the Project on the landscape values of the hill backdrop will be relatively small; the works within Te Puka Stream valley will have relatively low prominence or visibility from the plains because of the confined nature of the valley. Although the Main Alignment is on an embankment (or ramp) where it enters Te Puka Stream valley, it will nevertheless be at a relatively low elevation at that location. It is also at a relatively modified part of the hill backdrop which includes the transmission line, forest plantation, and the gas pipeline access track and a water tank on the spur west of the valley. I note also that the existing designation runs along the valley and the lower part of the valley is excluded from the mapped ONL.

51 There will be significant effects on the landscape values **within** Te Puka Stream valley. However such effects will have little significance on the value of the hills as a natural backdrop to the plains. Instead the effects will be mainly confined to the stream and its surroundings and are therefore more precisely addressed in terms of natural character effects, which I have discussed above.

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[3] See Policy 4, C.10: Landscape.

[4] See the Explanation to Policy 4, C.10: Landscape.

[5] Kapiti Coast District Council. *Landscape Assessment*. Works Consultancy Services Ltd. 1994. Page 40.

52 The photomontage from **Viewpoint 1** is from just south of MacKays Crossing looking south toward where the Main Alignment will traverse the Tararua Foothills and enter Te Puka Stream valley. It illustrates that the works are within the vicinity of exotic trees and pine plantation, that the route at this point is low in elevation and does not impact on the bold open hilltops that epitomise the ONL, and that from this angle the Main Alignment within Te Puka Stream valley is screened by topography.

53 The other matter that requires consideration in terms of the ONL is the proposed by-pass deviation of the **transmission line** at Wainui Saddle. Three alignment options were considered in this area:

53.1 An alignment through Wainui Saddle (more or less following the existing alignment) was ruled out because it could not be constructed until after the Project had been constructed. Even following construction I understand there is uncertainty as to whether a feasible route could be found through the Saddle because of the constraints of native bush on the one side, and lack of space to allow for conductor swing on the other. These matters are addressed in the evidence of **Ms Yorke**. In any event a bypass would be needed to maintain electricity supply to the Kapiti Coast during construction.

53.2 An eastern bypass option was also rejected. While the line itself (i.e. the towers and conductors) would have relatively low visual effects (because the alignment would not cross the highway, would have a reasonably fluid alignment, and would have low visibility from the coastal plain to the north) it would require clearance of native vegetation for access tracks and platforms and potentially to maintain conductor clearance. Such vegetation clearance would have visual as well as biophysical impacts.

53.3 By comparison the preferred western option will be more visible from the coastal plains to the north, and will introduce sharp angles and cross the proposed highway twice. However the western hills are in pasture and therefore avoid clearance of native vegetation, and there is an existing access road along the ridge associated with the gas pipeline which will reduce the earthworks required for access and platforms. The deviation will have low prominence from the coastal plains because of the distance inland and location on the shoulders of spurs below the main ridge. On balance, the western option was preferred for these reasons.

54 Three strain towers (9A, 10A, 11A) will be relocated to spurs above the saddle and heavy angle towers installed at towers 8A and 12A at each end of the deviation. The tower locations were refined

following a site visit by myself and line engineers to minimise visual effects as much as possible.

55 While there will be adverse landscape and visual effects, I consider the deviation to be appropriate for the following reasons:

55.1 It entails a deviation to an existing line which already traverses the ONL, rather than a new activity;

55.2 The deviation is the best of the options considered and was fine-tuned to minimise potential adverse effects; and

55.3 The degree of adverse landscape effects will be relatively modest, as discussed above. In particular there will be little effect on the main values of the ONL as a natural backdrop to the coastal plains.

56 The photomontage from **Viewpoint 14** is from within Queen Elizabeth Park and illustrates a view from a location selected to illustrate one of the closest and clearest views of the transmission line deviation from the coastal plain. It illustrates that Towers 9A and 10A will be visible above the skyline but that they will appear distant, located in the background beyond middle-ground ridges, and located below the highest parts of the skyline ridge.

57 Because neither the operative nor proposed Wellington Regional Policy Statements nor the other district plans (i.e. other than the KCDP) identify any ONF/ONLs, I assessed[6] the remaining landscapes within the Study Area for this purpose and concluded as follows:

57.1 The valleys of the Horokiri Stream and Duck Creek have relatively high landscape values but are not sufficiently 'outstanding' to be ONLs;

57.2 The Paekakariki Hills and the Pauatahanui Inlet with its northern backdrop hills[7] have sufficient landscape values to be considered ONLs but will not be affected (in landscape terms) by the Proposal.

58 In summary, the only ONL affected by the Proposal is the 'foothills of the Tararua Ranges'. In my opinion the Proposal can be considered appropriate in terms of section 6(b) in relation to this ONL because the effects will be relatively low on what I consider to be the main landscape values of the ONL.

59 I note that the existing SH1 along the coastal route traverses a landscape that in my view is also an ONL (Paekakariki Hills), and

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[6] Technical Report 5, pages 60-65.

[7] Sometimes referred to as the Kakaho Hills.

which I consider has higher value than the 'foothills of the Tararua Ranges'.

**Effects on Natural Landscape Elements**

***Effects on landforms***

60 There will be substantial earthworks as one would expect for a project of this size in such terrain, and some inevitable adverse effects on landforms, streams and natural vegetation in places. The effects overlap to a large extent with effects on natural character of rivers and their margins (discussed above), and with other disciplines such as ecology. I will therefore not repeat matters relating to effects on natural character of the streams that are discussed above in my evidence.

61 The large cut batters (and to a lesser extent the fill batters) will be a distinguishing feature of the Project. The most significant will be a sequence of side cuts up to 60m on the uphill side of the road in Te Puka Stream valley and upper Horokiri Stream valley, and the large mechanically stabilised slope (MSS) fill batters on the downhill side that will encroach into the course of Te Puka Stream and in places the upper Horokiri Stream. Such effects are unavoidable given the constraints of the narrow, steep-sided valley, and the need for additional crawler lanes because of the steep grade. There will be other large cut and fill batters in parts of the Project, such as the large box cut north of the Kenepuru Interchange, and the cut batters between the SH58 Interchange and the James Cook Interchange.

62 It is worth noting that the side cut batters in Te Puka Stream and Horokiri Stream valleys will be relatively 'shallow': their height is the consequence of the steep existing slopes. In other words the cut batters will be 'chasing' the underlying slopes and will effectively truncate spurs that have already been truncated by faulting and stream erosion.

63 The visual effect of all batters over 15m high will be exacerbated by the benching. While mono-slope batters would be visually preferable, I understand benches are essential in the fractured rock for safety and route security reasons. The effects of cut batters will be mitigated by the following techniques set out in the Urban and Landscape Design Framework (*ULDF)* (which is referenced by the proposed conditions: NZTA.46, PCC.28):

(a) Using horizontal benches rather than benching parallel to the road;

(b) Increasing the height of the lowest batter to 15m and avoiding the top benches by using a shallower slope and running top batters into the adjacent terrain;

(c) Rounding bench edges and batter edges to visually soften the earthworks; and

(d) Using revegetation techniques including hydro-seed and hydro-moss application in which native shrub species are included along with quick cover species, such as annual grasses and moss.

64 Cut and fill will be largely balanced over the Project area as a whole and I understand that those fill surpluses that will occur will be concentrated near the southern end of the route if the most likely construction sequence is followed. The six potential disposal sites for surplus fill are therefore located between the Cannons Creek area and the Kenepuru Interchange. I took part in their selection with a view to choosing sites with reduced potential landscape effects. Effects of the surplus fill sites on landform, waterways and vegetation have been largely avoided for the following reasons:

64.1 All sites are in pasture or pine plantation;

64.2 Two sites near Cannons Creek are on broad ridges or hilltop areas to maximise separation from watercourses, and which provide sufficient room for fill to be contoured to marry with the natural topography;

64.3 Two sites near Ranui Heights are in gullies that will be impounded by the Main Alignment, and one is immediately below one of the embankments. The two gullies are short, have small catchments, are modified by existing forestry, and would in any event be compromised by the embankments of the Main Alignment; and

64.4 The sixth site is on a hill slope above the existing SH1 at Linden, where the natural drainage is already modified and the land cover currently comprises pine plantation.

65 Designation conditions NZTA.47, PCC.29 and resource consent condition NZTA.E.17 (as now proposed to be amended) require that Landscape and Urban Design Management Plans (*LUDMP(s)*)[8] include landscape architectural input to earthworks, which would include input to treatment of batters and contouring of surplus spoil disposal sites. Principles relating to surplus fill sites are contained in the ULDF[9].

[8] In the conditions attached to the AEE, these were called "Landscape Management Plans." However, I understand that Ms Hancock recommends that their title be changed to reflect their urban design component. I am comfortable with the proposed change in title.

[9] Urban and Landscape Design Framework, Beca / Isthmus, Section 4.3, page 30.

66 The ULDF also earmarks the surplus fill disposal site above SH1 at Linden as an opportunity for a large earth sculpture which would help landmark and enhance amenity values of the Kenepuru Interchange, and help to mitigate the adverse visual effects of nearby cut batters.

67 Consents are not being sought at this time for earthworks relating to the access tracks and foundations for the **Transpower Project**. However the need for such earthworks was presumed and taken into account in undertaking the landscape and visual assessment. An assumption was also made that the 'best practice' principles[10] would be followed in the design and construction of such earthworks, as required by Condition TL.7.

***Effects on vegetation***

68 The Project will involve some clearance of exotic vegetation and, to a lesser extent, indigenous vegetation in places. The effects and mitigation of clearance of indigenous vegetation are addressed by **Mr Fuller's** evidence.

69 The proposed landscape planting has been designed to more than mitigate the loss of vegetation, and has been designed to complement and reinforce proposed ecological mitigation. In total approximately 570ha of revegetation is planned between both ecology and landscape work streams, including a range of restoration methods. Proposed planting includes:

(a) Restoration of Lanes Flat (mentioned above);

(b) A significant extension of the existing kanuka forest on the south side of Lanes Flat, connecting with Duck Creek in the next catchment;

(c) Revegetation within the road corridor that will connect the indigenous vegetation in Porirua Park with Cannons Creek;

(d) Restoration of riparian vegetation where the Main Alignment crosses streams in a number of places;

(e) Woodlot and riparian planting in Battle Hill Farm Forest Park; and

(f) Planting using indigenous, and in some instances exotic species, to provide screening or softening of views.

70 The principles adopted, as illustrated on the landscape plans (LA01-LA21), include:

[10] Technical Report 5A, Appendix 5H.

(a) Restoring vegetation in bold patterns using limited species palettes in response to the broad scale landscape;

(b) Designing vegetation to be contiguous with existing vegetation patterns;

(c) Emphasising underlying topography, for instance emphasising streams by re-establishing riparian vegetation on both sides of the road where the Main Alignment crosses streams in a number of places.

71 For the reasons given above, in my opinion the quality of the environment will be acceptably maintained (with regards landscape aspects) in terms of section 7(f) in the context of a project of this nature. The effects have been avoided where possible and the remaining effects will be adequately remedied and mitigated.

**Effects on landscape amenity**

***Effects on landscape character***

72 The Project will introduce significant change to the existing landscape character as one would expect from an alignment through mostly rural green-fields landscapes. Such adverse amenity effects will be greater in the more natural sections of the route; i.e. Te Puka Stream, Horokiri Stream, and Duck Creek.

73 Notwithstanding such effects, those more natural sections of the route will also have the highest amenity for future travellers because of the experience of driving through such bold and natural landscapes.

74 At the broad scale the route follows fault-line valleys parallel to streams and fault scarps. In other words it follows the landscape 'grain'.

75 At a fine scale the alignment was fine-tuned to improve the 'fit' with the landscape. For instance the alignment was modified to reduce the impact on the hill at the northern end of 'Gas Line Ridge' in Battle Hill Farm Forest Park and to introduce a sweep that follows the toe of that hill.

***Effects on Battle Hill Farm Forest Park***

76 Social effects of the Project on use of Battle Hill Farm Forest Park and Belmont Regional Park are addressed in **Mr Gary Rae's** evidence. The following section of my evidence addresses landscape amenity aspects.

77 Adverse landscape effects on Battle Hill Farm Forest Park will be mainly confined to the Horokiri Stream valley, which currently has a

remote and quiet character. There will also be some 'severance' effects because the Project will separate the main part of the park from the Transmission Gully – Puketiro Loop Track which extends into the pine forest east of Horokiri Stream, although physical access will be re-instated by an underpass and proposed planting on the approaches to the underpass will mitigate the visual impact for track users to some extent. The proposed woodlot and riparian planting in this area was discussed with Regional Council staff and is consistent with a draft internal plan referred to as the 'Battle Hill Farm Forest Park Sustainable Land Management Plan'. It is also proposed to provide access parallel to the Main Alignment between the park and the northern end of Te Puka Stream valley which will effectively connect with Queen Elizabeth Park.

78 There will be relatively low effects on the rest of the park (i.e. the entrance, headquarters, and most of the tracks) which is separated from the Project by a hill referred to as 'Gas Line Ridge'.

79 The refined alignment is likely to have less effect on the park as compared to a road built within the existing designation. The latter would be elevated on the hill slope on the eastern side of Horokiri Stream so would be more visible, and have greater impacts on the tributary streams on the east side of Horokiri Stream valley.

80 The photomontages from Viewpoints 2A, 2B ('Gas Line Ridge') and 3 illustrate landscape effects on the park and on the natural character of Horokiri Stream:

80.1 The photomontages from **Viewpoints 2A and 2B** (looking north and south respectively from the same location on Gas Line Ridge) illustrate that although there are few structures and the landscape is dominated by natural landform, it is nevertheless modified by pastoral farming and plantation forestry. They show the extent to which the Project will change the character of the valley, but also that the alignment follows the topography on the edges of the flood plain, maintaining separation from the stream. The underpass (Bridge No.7) for the Transmission Gully – Puketiro Loop Track is in the middle of the photo from **Viewpoint 2B**. The track continues in the pine forest on the hills on the left of the photo. The headquarters and main part of Battle Hill Farm Forest Park are on the opposite side of Gas Line Ridge to the right of the photo.

80.2 The photomontage from **Viewpoint 3** is also a view from Gas Line Ridge but from near the southern end of the ridge (and near the southern edge of the park) looking north. It similarly illustrates the extent to which the Project will change the existing quiet rural character of the valley. It also

illustrates that the Main Alignment follows the edge of the flood plain, maintaining separation from the Horokiri Stream.

***Effects on Belmont Regional Park***

81 Adverse landscape effects on Belmont Regional Park will include effects in the Duck Creek valley in the western part of the park where the Project will significantly compromise the existing quiet rural and natural character, and severance of the main part of the park on the Belmont Hills from the hills west of Duck Creek. The effects on severance will be mitigated by maintaining access at the two locations where tracks cross the Main Alignment by aligning the tracks beneath bridges (Bridges 18 and 19), and maintaining the connection to the suburb of Cannons Creek by realigning the Takapu Track beneath the Cannons Creek viaduct (Bridge 20).

82 The Project will also be visible from tracks on the upper Belmont Hills. However from such areas the Project will appear at a low elevation in the landscape, relatively distant, and viewed in the context of the Porirua urban backdrop. In general terms the Belmont Regional Park provides an experience of natural hills with elevated views over the region's urban areas (Wellington, Hutt Valley and Porirua). This experience will remain essentially unchanged.

83 Photomontages from Viewpoints 9 and 10 illustrate the Project in Duck Creek and Belmont Regional Park:

83.1 **Viewpoint 9** is on Cannons Head Track[11] at relatively low elevation looking north along Duck Creek valley with the Moonshine Fault scarp on the left side of the photo. It shows the adverse effects of the Project on the natural and rural character of Duck Creek, but also the nature of the positive landscape experience for future road users. It shows the large box cuts through the toes of spurs, and also the extent to which such an alignment helps to embed the road in the topography and provide some separation from Duck Creek itself. Part of the revegetation work carried out as a condition of the current designation is shown in the middle-ground adjacent to the bridge.

83.2 **Viewpoint 10** is higher on Cannons Head Track looking down one of Duck Creek's main tributaries. It is approximately 100m above the Main Alignment and some 120m – 150m below the main ridge of the Belmont Hills. The photomontage illustrates that from higher viewpoints the highway will appear low in the landscape and will be viewed in the context of the Porirua urban area.

[11] This is incorrectly referred to on the photomontages as Cannons Knob Track.

***Effects on Pauatahanui Village***

84 In terms of landscape context Pauatahanui village is based on an historical road junction (Paremata Road, Haywards Road and Paekakariki Hill Road) and is oriented to Pauatahanui Inlet. The Main Alignment, on the other hand, is between 700m-1km inland 'behind' the village. There is an intervening hill between the main part of the village and the Main Alignment.

85 The main adverse effects in terms of Pauatahanui village relate to St Joseph's Catholic Church and Cemetery which is on the opposite (eastern) side of the Main Alignment. The Project will have moderate amenity effects on the church property itself (the Main Alignment will be approximately 170m away and elevated on an embankment at roughly the same level as the church) and it will accentuate the severance between the church and the village. It is worth noting that the church was always an outlier to the village and the Project will accentuate an existing separation. The Built Heritage report (Technical Report 19) (as supported by the evidence of **Mr Bowman)** proposes that planting be carried out adjacent to the Main Alignment to mitigate visual effects from the church, and such planting has been incorporated into the landscape plans.

86 Photomontages from Viewpoints 4 to 6 illustrate the Project from viewpoints in the vicinity of Pauatahanui village:

86.1 **Viewpoint 4** is from the existing SH58 roundabout south of the village. It illustrates the existing infrastructure and modified land management of Lanes Flat, and the extent to which the Project would be a prominent feature at the head of Lanes Flat.

86.2 **Viewpoint 5** is from the intersection of SH58 and Bradey Road below St Joseph's Church. It shows that the Main Alignment embankment will truncate the views that open up to travellers where Pauatahanui Stream valley emerges onto Lanes Flat. Views over Lanes Flat would instead open up after travellers have passed beneath the Main Alignment (under Bridge 13).

86.3 **Viewpoint 6** illustrates an elevated view from the 'Silverwood' subdivision in Whitby. It illustrates that the interchange will be a dominant feature for properties overlooking Lanes Flat from such viewpoints. It also illustrates the extent to which the Main Alignment will be 'embedded' in the rolling topography to the north, and the extent to which foreground topography screens the section of the Main Alignment between the SH58 and James Cook interchanges from such viewpoints.

***Effects on other historical landscape associations***

87 As discussed above, the Project maintains the existing spatial relationship between SH1 and the historical camp sites at MacKays Crossing, and the Main Alignment was refined to preserve the tank storage structure in Te Puka Stream valley. The Project is also well separated from sites associated with the 1846 fighting at Battle Hill.

***Landscape amenity effects of the Transpower Project***

88 The effects of changes to the transmission line are discussed in relation to individual and groups of towers in Technical Report 5A. The most significant landscape effects will be associated with the proposed deviation at Wainui Saddle which I have already discussed above in relation to the ONL. Apart from the deviation, changes to the rest of the transmission line entail relatively small relocations of existing towers, re-alignments of the line and replacement with larger towers in some locations. The parts of the line of most landscape interest are Towers 13A-15A, 16A-18A, 22A-25A, 31A-33A and 40A-43A. I note that tower locations in most instances have a 20m tolerance in every direction which I have taken into account in my assessment.

88.1 Towers 13A-15A are to be relocated south of their current locations, and replaced with larger towers. Although they will be a little higher on the hill slope compared with their existing locations, their bases will still be at a low elevation below the road which will be benched on the opposite side of the valley.

88.2 While larger towers will be required for Towers 16A-18A, they will be located at lower elevation on the hill slope, as compared with the existing towers.

88.3 Towers 22A-25A are to be moved east higher on the hill slope and replaced with larger towers. The relocation of this section of the line was designed to avoid crossing and re-crossing the proposed highway, to reduce visual effects for future road users. The largest shift is Tower 24A which will be replaced some 100m to the east and 40m higher on the hillside and will require a larger, heavier tower –partly a consequence of the elimination of Tower 23 to the north. Earthworks to construct a platform and access, and clearance of pines and regenerating scrub will be required. Mitigating factors include the line being viewed mainly against a hill backdrop and the elimination of one existing tower. Planting is including in Landscape Plan LA07 to remediate the access works and mitigate the visual effects of the tower from the highway.

88.4 Towers 31A and 32A will also be moved to the east. The larger of the shifts will be Tower 32 which will be replaced approximately 80m to the east and 20m higher on the hill

slope. Larger towers will be required and an angle will be introduced between Towers 32A and 33A to cross the Main Alignment. This section of the line will be visible from some properties on Paekakariki Hill Road. Mitigating factors include the fact that from most angles the line will be viewed against a hill backdrop, and that although Tower 32A will be more elevated and potentially prominent in views from the Paekakariki Hill Road properties, it will also be approximately 80m further away. Visual mitigation planting is included in Landscape Plan LA09 to reduce visual effects.

88.5 Tower 40A will be relocated north of the existing tower, the foundation will be approximately 10m higher, and it will be replaced with a higher tower. This will result in 'moderate' visual effects from two dwellings on Flightys Road. While larger towers will also be required for Towers 41A-43A, their foundations will be at lower elevation and they will be relocated further to the west, away from properties on Flightys Road. Visual mitigation planting is included in Landscape Plan LA11.

89 In summary, with the exception of the Wainui Saddle deviation, the changes to the existing transmission line and consequent landscape effects will be relatively small and will be adequately mitigated.

***Visual amenity effects from private properties and representative viewpoints***

90 Appendix 5.D to the Landscape and Visual Assessment (Technical Report 5) tabulates an estimate of visual effects from dwellings and representative viewpoints of urban areas that might potentially be affected by the Project. In most instances the assessments are based on road-side observation and desk top analysis, although in a number of cases site visits were arranged to particular properties. The assessment was carried out by Mr Wade Robertson under my instruction.

91 The assessments indicate that there will be adverse effects ranging between 'moderate' and 'very high' (i.e. between 3 and 5 on a 5-point scale) on some properties near the alignment. These include some properties in urban areas at the southern end of the route (Tawa, Porirua East, Cannons Creek) and a small number of rural or lifestyle properties mainly in the middle sections of the route:

91.1 Of those properties near MacKays Crossing the effects were estimated to be 'moderate' (i.e. 3 on a 5 point scale) at three dwellings[12] due to their orientation toward and proximity to the route. Effects will be mitigated by proposed native

[12] Technical Report 5. Sections 13.1.8 – 13.1.10 and LA 121.

pioneer shrubs and ground covers[13] and native and fast growing exotic trees[14] in conjunction with existing vegetation.

91.2 Of those properties accessed from Paekakariki Hill Road[15], the visual effects were estimated to be 'very high' at one dwelling (5 on a 5 point scale), 'high' at a second dwelling (4 on a 5 point scale), and 'moderate' at a further five dwellings (3 on a 5 point scale). Such effects are the result of proximity to the route and orientation of the dwellings towards the Main Alignment. Effects will be mitigated by proposed native re-vegetation of cut and fill batters[16] and native and fast growing exotic trees planted directly adjacent to the Main Alignment[17]. Two to three rows of fast growing exotic trees are also proposed outside the proposed designation boundary on one property. This has been agreed with the owner[18].

91.3 Of those properties accessed from Flightys Road, the visual effects were estimated to be 'high' at two dwellings[19], and 'moderate' at one further dwelling, due to proximity to the route and orientation of the dwellings. Effects will be mitigated by large patches of existing native re-vegetation[20] and proposed native and fast growing exotic trees planted directly adjacent to the Main Alignment[21].

91.4 Of those properties located in the vicinity of SH58, the visual effects were estimated to be 'very high' at 4 dwellings, 'high' at 8 dwellings, and 'moderate' at 8 dwellings[22]. These effects will be the result of the scale of the proposed interchange; its visual dominance over the upper reaches of Lanes Flat; the presence of the construction compound; the elevation of dwellings on slopes adjacent to Lanes Flat overlooking the interchange; and the orientation of dwellings towards Lanes Flat (and more distant views of Pauatahanui Inlet). Effects will be mitigated by planting adjacent to the Main Alignment[23]

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13 Technical Report 5. Appendix 5E, page 213, 'MacKays Crossing'.

14 Technical Report 5. Appendix 5E, page 214, 'MacKays Crossing'.

15 Technical Report 5. Sections 13.1.62 & 13.1.63 and LA 122.

16 Technical Report 5. Appendix 5E, page 211, 'Cut and fill faces'.

17 Technical Report 5. Appendix 5E, page 214 & 215, 'Battle Hill'.

18 Technical Report 5. Appendix 5E, page 215, 'Golf Course'. In relation to property No.675 (see LA 09).

19 Technical Report 5. Sections 13.1.75 & 13.1.76 and LA 122.

20 Carried out by NZTA as a result of the approval of the existing designation. These areas are identified on the Landscape Plans (LA01 – LA21).

21 Technical Report 5. Appendix 5E, page 215 & 216, 'Golf Course'.

22 Technical Report 5. 13.1.110 and LA123.

23 Technical Report 5. Appendix 5E, page 213, 'Pauatahanui'.

and the interchange and construction compound[24], and by the enhancement of Lanes Flat as a whole including restoration of the wetland vegetation[25], restoration of riparian vegetation along Pauatahanui Stream[26], and extension of existing kanuka forest on the adjacent slopes[27]. Two to three rows of fast growing exotic trees are also proposed outside the designation and have been agreed with the owners of one property[28] east of the Main Alignment.

91.5 Of those properties potentially affected by the James Cook interchange and PCC Link Roads the visual effects were estimated to be 'very high' at one dwelling, 'high' at four dwellings, and 'moderate' at four dwellings and four other representative locations in the urban area[29]. These effects are largely due to proximity to the Main Alignment and/or Link Roads. The effects will be mitigated by extensive planting of kanuka forest[18] proposed around the James Cook Interchange, and planting adjacent to the Link Roads[7].

91.6 Of those properties potentially affected by the Kenepuru Interchange, Kenepuru Link Road and sections of the Main Alignment behind Porirua East/Cannons Creek, the visual effects were estimated to be 'very high' at four representative viewpoints, 'high' at three viewpoints, and moderate at 33 viewpoints[30]. The effects will be mitigated by proposed planting[31] in conjunction with existing vegetation. It is proposed that a proportion of the existing pine plantation in the vicinity of the Kenepuru Interchange be retained during construction to mitigate effects[32]. Noise walls and bunds are proposed adjacent to a number of properties in this area. Planting is proposed adjacent to such structures to soften visual effects[33].

92 However, the visual amenity effects will be less than might be expected for a project of this scale for the following reasons:

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[24] Technical Report 5. Appendix 5E, page 219 & 220, 'SH58'.

[25] Technical Report 5. Appendix 5E, page 220 & 221, 'Lanes Flat Marsh'.

[26] Technical Report 5. Appendix 5E, page 219, 'Riparian Stream Margin'.

[27] Technical Report 5. Appendix 5E, page 216 and 217, 'Kanuka Corridor'.

[28] Property No.276 (see LA 13).

[29] Technical Report 5. Sections 13.1.125 & 13.1.219 – 13.1.225 and LA 123.

[30] Technical Report 5. Sections 13.1.168, 13.1.187 & 13.1.188, 13.1.202 – 13.1.206 and LA 124.

[31] Technical Report 5. Appendix 5E, page 214, 'Linden'.

[32] See 'Indicative SSEMP –Kenepuru Interchange Stream Focus Area', Section 7.4.1, Page 10.

[33] Landscape Plans LA20 and LA21.

92.1 Urban areas make up a relatively small proportion of the route, and the effects from Porirua East and Cannons Creek will be moderated by the fact there is a reasonable distance of separation between properties and the alignment (typically greater than 200m), the alignment is contained to a reasonably large extent within box cuts, and there is substantial screening by landform and existing vegetation;

92.2 There are long sections of the route with no, or very few, dwellings; and

92.3 Recently developed properties in the lifestyle areas have been developed in anticipation of a highway; the alignment tends to follow 'rear' boundaries between such properties; and views of the Project will typically be restricted by the rolling topography and vegetation in those areas (e.g. woodlots, shelter belts, native re-vegetation plantings, amenity planting).

93 Mitigation is proposed for properties adjoining the alignment including noise walls and planting in urban areas, and planting adjacent to the Main Alignment in rural areas. In some instances mitigation outside the designation boundaries has been agreed with property owners.

94 In addition to individual properties, there will be wider views from the urbanised Porirua basin. The Main Alignment traverses the hill face above and behind the suburbs of Ranui Heights, Porirua East and Cannons Creek. However, the alignment is sufficiently low that it will be visually associated with the urban fabric rather than the natural hill tops; the sequence of box cuts (predominantly) and embankments mean the alignment will appear 'embedded' in the terrain (rather than benched around the hill face); and the adjacent suburban areas are naturally oriented to the north so the alignment will be 'behind' the suburbs. Extensive planting proposed along the road margins will further reduce visibility and soften the appearance of the road and cut faces.

95 Photomontages from Viewpoints 7 to 13 illustrate representative views from urban areas:

95.1 The photomontage from **Viewpoint 7** is from an elevated location in Cleat Street looking across eastern Whitby toward the James Cook Interchange and the Waitangirua Link Road and lower Duck Creek catchment. It illustrates that although the Project comprises large earthworks and is relatively elevated, the topography is such that it visually absorbs the works. For instance, although James Cook Interchange is on a ridge, from this viewpoint it will be viewed beyond foreground ridges, and against a backdrop of hills.

95.2 **Viewpoint 8** is from the opposite the end of the Waitangirua Link Road. It illustrates the cross-roads intersection adjacent to the Waitangirua Marae (Maraeroa). It also illustrates that from this viewpoint the road is largely screened by existing vegetation as it climbs the hill, although from viewpoints in the car park to the right there will be clearer views of the road and a box cut through the ridge.

95.3 The photomontage from **Viewpoint 11** is from an elevated location in the eastern Porirua basin, looking south across Porirua East toward the Project. It shows that the road is associated more closely with the urban fabric than the open hill tops, that it is 'behind' the north oriented suburbs, and the extent to which the Main Alignment is screened by topography, although upper portions of the large cut batters will be visible.

95.4 **Viewpoint 12** is from Porirua Train Station looking toward Ranui Heights (the southbound view from the existing SH1 motorway south of Mungavin Avenue would be from a similar angle). The photomontage shows cut faces adjacent to the Kenepuru Interchange, the large embankment, surplus fill disposal site, and sections of carriageway above and behind Ranui Heights. It illustrates that large scale earthworks will be prominent from such viewpoints, but also the extent to which foreground topography partially screens the Main Alignment and embeds it within the terrain.

95.5 **Viewpoint 13** is from an elevated location in Tawa looking across the Linden area to the Kenepuru Interchange. The photomontage shows the Main Alignment and interchange will be elevated and prominent compared to the existing SH1 motorway, and in particular the prominence of the benched cut face north of the interchange. The fill site indicated in the photomontage is the site ear-marked for an earth sculpture, as discussed above.

96 A separate assessment of the effects of the Transpower Project on views from dwellings is also included in the Property Inventory[34]. Adverse effects in the 'moderate' category were assessed for seven houses on six properties. Five of the instances relate to Towers 32-33A discussed above, and the remaining two instances to Tower 40A. In each instance planting has been incorporated into the Landscape Plans (LA09 & LA11) to mitigate effects.

97 There will be some minor positive visual effects for several properties in Flightys Road because towers will be moved further

[34] Technical Report 5, Appendix 5D.

away from dwellings and in some instances located at lower elevations beyond a low intervening ridge.

***Effects for future road users***

98 The experience for future travellers will be characterised by:

98.1 Large constructed earthworks traversing bold topography (including deep box cuts, high side cuts and over-steepened fill batters);

98.2 Natural landmarks including the steep and narrow Te Puka Stream valley and Wainui Saddle summit, Horokiri Stream valley, Lanes Flat, Duck Creek and Cannons Creek; and

98.3 A sequence of enclosure (within box cuts, narrow valleys and vegetation) interspersed with open views from embankments and long views along valleys (e.g. Horokiri valley).

99 The experience will be largely positive. Transmission Gully will be a 'gateway' marked by the sharp contrast between the coastal plains north of MacKays Crossing and the steep hill country of the Transmission Gully route. Wainui Saddle will also be a particular 'gateway'.

100 The main visual detraction will be the large cut faces. The ULDF includes objectives and techniques that explain how these potential effects can be ameliorated. Proposed conditions[35] require that the design of earthworks be undertaken in accordance with these objectives as part of a LUDMP. The ULDF also provides objectives and guidelines to reduce the visual clutter typically associated with highway furniture, and the Landscape Plans (LA01-LA21) illustrate planting designed to integrate the road within the landscape.

101 The transmission line will be prominent from the proposed highway, which is an inevitable consequence of the highway's alignment along the valley parallel with the existing line. However the **changes** to the transmission line were designed to reduce such adverse effects, in particular by reducing the number of road crossings and angles, and increasing the separation distance between road and line as far as practicable.

102 Planting was incorporated into the Landscape Plans to mitigate the effects from the road. For example planting between the Main Alignment and Towers 24A, 31A, 32A and 33A (Landscape Plans LA07-LA09) is designed to visually anchor the towers, and provide partial screening and perspective depth from people passing on the highway (and from other places in the surrounding landscape).

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[35] Condition NZTA.46 and PCC.28.

***Summary of landscape amenity effects***

103 For the reasons given above, in my opinion the Proposal will acceptably maintain landscape amenity in terms of Section 7(c): the effects have been avoided where possible in the context of a proposal of this nature, and the remaining effects will be adequately remedied and mitigated. In some instances there will also be positive landscape effects.

**Landscape effects during construction**

104 Effects on biophysical aspects of the landscape during construction include potential sedimentation, direct impacts on streams during construction of culverts and diversions, and clearance of vegetation. Such effects and the measures proposed to avoid, remedy and mitigate them, are addressed in other technical reports (principally Technical Reports 11, 14 and 15) and the evidence of **Mr Fuller**, **Dr Keesing**, **Mr Martell** and **Ms Malcolm**.

105 Adverse visual amenity effects will typically be amplified during construction as a result of the earthworks being exposed, and from the construction activity itself. The works will be temporary and will be remediated progressively as each part of the Project is completed.

106 As discussed above, it is proposed to retain part of the pine plantation adjacent to the Kenepuru Interchange to mitigate visual effects during construction.

107 The main Project site compound at Lanes Flat will have adverse visual amenity effects throughout the construction period, and high visibility because of its location adjacent to SH58. To address this, mitigation planting will be carried out at the commencement of the Project and will form part of the long term landscape measures for Lanes Flat. Such planting, however, will need to follow the earthworks required to form the Site Compound and SH58.

**LANDSCAPE MEASURES TO AVOID, REMEDY AND MITIGATE ADVERSE EFFECTS**

108 Comprehensive landscape design measures are set out in the ULDF and the Landscape Plans (LA01 to LA21).

109 I have referred in my evidence above to measures to avoid, remedy and mitigate effects in relation to particular issues. The following overall approach was taken to landscape design measures:

109.1 The priorities were avoidance, remediation and mitigation given a project of this nature;

109.2 Landscape measures were designed in conjunction with other work streams to maximise cross-over benefits. In particular

the ecological, landscape and urban design measures are complementary and reinforce each other (for example the landscape restoration of Lanes Flat in conjunction with restoration of riparian vegetation on Pauatahanui Stream);

109.3 While measures were designed to mitigate specific adverse effects, opportunities were also sought to achieve positive effects from each mitigation measure (for example to achieve ecological benefits from planting carried out for visual purposes such as the extension of kanuka forest between Lanes Flat and Duck Creek);

109.4 Attention was focused on improving each element of the Project, even where the element might not be significant in itself, to cumulatively enhance the design (for example attention was extended in the ULDF to such measures as principles relating to the design and location of highway furniture); and

109.5 Alternative refinements to the alignment, structures and remediation measures were investigated in those locations with potentially significant effects (for example the bridge design at Pauatahanui Stream, and the road alignment at Battle Hill Farm Forest Park).

110 In relation to the Transpower Project, measures taken to avoid or reduce potential adverse effects of changes to the **transmission line** include provision of 'best practice principles for transmission line alignment', input to route selection workshops, and site visits to investigate alternative alignments. These measures are described in more detail in Technical Report 5A[36].

111 Further measures proposed to remedy and mitigate those effects that cannot be avoided include planting in the vicinity of Towers 24A[37] and 31A[38] to reduce adverse effects on views from nearby properties and views from the proposed highway, controls on the locations of specific towers, and a best practice guideline for earthworks for tower access and foundations. Planting proposed as part of the NZTA Project will also help mitigate visual effects of the Transpower Project in a number of locations. For instance planting in the vicinity of Towers 32A and 33A is specifically designed to mitigate effects of both the Main Alignment and the Transpower Project.

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[36] Technical Report 5A: Pages 11-15.

[37] Planting on the east side of the Main Alignment between chainage approximately 8950m-9200m.

[38] Visual mitigation planting on the east side of the Main Alignment between chainage approximately 11100m-12050m.

**PROPOSED CONDITIONS**

112 Proposed landscape conditions for each of the designations are included in the AEE at NZTA.46-50 and PCC.28-32. I have proposed several further conditions, or modifications to conditions, in response to matters raised in submissions, which I discuss in the following section of my evidence.

113 Conditions NZTA.46 and PCC.28 require that a LUDMP be prepared as part of the Outline Plan for any stage of the works. The LUDMP(s) are to be consistent with the ULDF and the Ecological Management and Monitoring Plan, and also to be in accordance with NZTA's standard guidelines or principles for urban design and landscaping.

114 I also suggest that Conditions NZTA.46 and PCC.28 be amended to require that the LUDMP(s) be consistent with the Landscape Plans LA01-LA21 (Isthmus 2011). This would provide sufficient certainty as to the status of the Landscape Plans.

115 Conditions NZTA.47–50 and PCC.29-32 go on to detail the content of the LUDMP(s), and matters relating to their preparation, plant pest control, and implementation timing.

116 LUDMP(s) are to ensure landscape input to earthworks contouring, integration of the works into the surrounding landscape, mitigation for affected properties, and mitigation of noise walls. Such matters are outlined in the ULDF and Landscape Plans. NZTA resource consent condition E.17 and PCC resource consent condition E.54, which address the requirements of the Construction Environmental Management Plans, reinforce landscape architectural input to the contouring and revegetation of earthworks, particularly cut batters.

117 I consider the conditions to represent a 'best practice' approach for the following reasons:

117.1 The LUDMP(s) provide the mechanism to translate the ULDF and Landscape Plans (LA01-LA21) to detailed design;

117.2 The UDLF and Landscape Plans address the landscape design in a comprehensive manner integrated in particular with ecology and urban design; and

117.3 The conditions reinforce that integration by requiring the LUDMP(s) to be consistent with the Ecological Management and Monitoring Plan.

118 Proposed landscape conditions relating to the Transpower Project are included in the AEE at TL.6-12.

118.1 Conditions TL.6-7 require that the works be carried out in accordance with landscape 'best practice' principles for transmission line design and for access/foundation earthworks respectively. The principles are included as Appendix 5G and 5H of Technical Report 5A;

118.2 Condition TL.8 provides constraints on the flexibility of location for certain towers. These constraints were imposed to avoid potential adverse landscape effects; and

118.3 Conditions TL.9-12 relate to mitigation planting. They require planting be implemented as indicated on the Landscape Plans. A landscape mitigation plan is also required to address such matters as detailed design, programme, planting techniques, and maintenance.

119 I consider the landscape conditions for the transmission line to be appropriate and properly integrated with the measures for the Transmission Gully Project.

**RESPONSE TO SUBMISSIONS**

120 The following section of my evidence responds to landscape and visual matters raised in submissions.

121 **Submission No.12** (Ranui Residents' Association) includes a request to plant native trees in as many places as possible (to support increasing native birdlife), and to remove and replace the pines in the area with native species.

122 *Response:* The proposed planting shown on Landscape Plan LA20 and the landscape treatment table 5.18 of the ULDF illustrates predominant use of native species. I understand that some of the pine plantation will be removed to enable construction, and such areas will be re-vegetated in native species following construction. It is proposed, however, to retain the pines beyond the area required for works, including the trees closest to Ranui Heights, to screen construction works and reduce dust. While I support eventual replacement of these pines with native species, I recommend they be retained in the medium term to visually soften the Project and provide shelter for native regeneration. Some native birds (e.g. tui) also benefit from such high trees.

123 **Submission No.18** raises issues relating to visual effects on a property at Tremewan Street, Tawa that would arise from the removal of houses on the opposite side of the street that currently provide a buffer between the property and motorway. The submission requests consultation on possible mitigation.

124 *Response:* I understand a decision has not been made on whether to retain or remove these houses. I support a condition that in the event of their removal the visual mitigation planting shown on Landscape Plan LA20 be extended further south and that the submitter is consulted on the design of this planting. The rising nature of the land on the opposite side of the street would increase the effectiveness of such planting.

125 **Submissions No. 19, 20** and **57** relate to adjoining properties on Paekakariki Hill Road (nos. 462, 436A and 504 respectively) and collectively request that the Main Alignment be shifted to the east, closer to the existing designation and further away from the houses on these properties. Submission 57 includes a map illustrating a specific alignment.

126 *Response:* I accept the proposed road will be closer to the houses and encroach further into two of the properties (submissions 19 and 57), as compared with the existing designation. However the proposed Main Alignment is close to the toe of the hills so that it follows the topography and is relatively low in the landscape. Relocating the alignment to the east would shift it to higher terrain. A movement of some 100m to the east would shift the road roughly 30m higher on the hillside which would likely increase the road's prominence.

127 Extensive visual mitigation planting is proposed as indicated on Landscape Plan LA09. I support a condition that the detailed design of such planting be finalised in consultation with the owners.

128 I note that the distance between the proposed and existing designations is not as great as indicated in Submission 19, which states that the Main Alignment will be approximately 100m from the house on that property, as compared with 500m for the existing designation. In fact the proposed designation is approximately 180m from the house, the existing designation 270m, and the proposed Main Alignment approximately 220m.

129 Submission 57 also states that Transpower Towers 31 and 33 would not need to be moved if the suggested alternative alignment proposed by the submitter was to be adopted. However if Tower 32 were to be shifted, Towers 31 and 33 would likely be replaced with stronger angle towers, which would entail construction of new towers alongside existing towers.

130 **Submission No. 21** supports the NoR but questions whether provision has been made for pedestrian and cycle access across the proposed road, and recommends that such access should use over-bridges rather than underpasses for personal safety reasons.

131 *Response:* Access is to be maintained at all existing roads and public tracks as follows:

(a) Mackays Crossing -a 3m wide shared pedestrian and cycle path on the west side of the north-bound link between the existing SH1 and the Main Alignment (which would connect with a planned regional cycle route via the coast);

(b) Battle Hill Farm Forest Park –an underpass (Bridge 7) on the Transmission Gully – Puketiro Loop Track;

(c) SH58 –a separate cycle and pedestrian path adjacent to Pauatahanui Stream beneath Bridge 15 which is divided into three separate bridges with skylight between them. No separate pedestrian/cycle paths are proposed through the SH58 interchange itself although the ULDF recommends adequate shoulder width to accommodate on road 'sports' cyclists;

(d) Belmont Hills Regional Park –the two existing tracks to be maintained beneath bridges (Bridges 18 and 19);

(e) Cannons Creek –the existing track to be reconnected beneath the viaduct (Bridge 20); and

(f) Collins Avenue –the existing path and street to be maintained beneath a duplication of existing bridge (Bridge 26).

132 While I understand the concerns regarding personal safety and amenity, in this case underpasses will be preferable for the following reasons:

(a) The underpass on the track in Battle Hill Farm Forest Park will better facilitate cycle and horse access, it will be straight with clear sightlines through the underpass, and its rural location means personal safety issues are less likely to arise compared to some urban locations;

(b) The access at Collins Avenue will extend an existing underpass and will combine both the street and footpath, thereby maintaining passive surveillance; and

(c) In the other cases the paths will be aligned under highway bridges, using the topography for grade separation.

133 In addition it is proposed to provide public access on the 3m wide access track parallel with the Main Alignment between the northern

end of Te Puka Stream valley and Battle Hill Farm Forest Park, effectively linking the latter park with Queen Elizabeth Park. Details on the pedestrian access design are included in the ULDF and are also discussed in **Ms Hancock's** evidence.

134 **Submission No.22** supports the NoR but suggests a rest area be built at Wainui Saddle.

135 *Response:* Although the Wainui Saddle will be a natural gateway with good views, the steep hillsides and confined space make a rest area impractical. The Main Alignment will be in a box cut approximately 20m-30m deep through the saddle. Widening to accommodate a rest area north or south of the saddle would require either further extension of the fill-batter into the valley and/or larger cut batters into the hillside.

136 **Submission No.23** (Kapiti Coast District Council) supports the NoR subject to conditions relating to a range of matters. Those relevant to landscape and visual matters include the following:

(a) Performance based criteria for revegetation;

(b) Naturalised look of earthworks, particularly the realignment of Te Puka Stream, and shaping of riparian batters;

(c) Minimising the extent of terraced batters, and where possible laying the batters back without terracing;

(d) Shaping of batters to blend with existing slopes;

(e) Minimisation of structures such as lighting, signage, barriers etc;

(f) Use of low visual impact materials and colours;

(g) Monitoring of re-vegetation beyond 3 years;

(h) Maintenance or improvement of access to public open space;

(i) Provision of a lookout on highest suitable point of the western ridge;

(j) Provision for further corrective work where an operation event causes damage once the route is operational;

(k) Consideration be given to relocating Towers 9A, 10A and 11A (i.e the western deviation at Wainui Saddle) post construction; and

(l) Consideration be given to relocating Tower 2A to the eastern side of the road.

137 *Response:* I support the inclusion of performance based criteria for the planting, as part of the LUDMP(s), and the use of trials to ensure techniques are tailored to the particular conditions to enhance the success of the planting. While further maintenance of vegetation is likely to be required beyond the three years specified in the conditions, including corrective work such as re-vegetating slips, there comes a point where such work is part of on-going maintenance, rather than part of the construction process. In my opinion 3 years is a reasonable cut-off for the former.

138 Reconstruction of Te Puka Stream to create a naturalistic appearance (and to reconstruct ecological functions) is addressed in the evidence of **Mr Fuller**. It is not clear if the term 'riparian batter' refers to the MSE batter below the road but, to avoid any doubt it is not desirable for that batter to be naturalistic. Instead it should be as steep as possible to minimise encroachment and for aesthetic reasons it should have consistent form and slope as a 'sculptural green wall' (Technical Report 5, page 112).

139 Proposed designation conditions NZTA.47 and PCC.29, NZTA resource consent condition E.17 and PCC resource consent condition E.54 all require the input of a landscape architect to contouring of all earthworks. As discussed earlier, while it would be visually preferable to avoid benches, I understand they are necessary for safety and route security reasons. The ULDF includes measures to mitigate the effects of the batters including laying back the tops, rounding bench edges, scarifying and hydro-seeding faces, and replanting benches. It is not possible to lay the batters in Te Puka valley any further back because the batters are already 'chasing' steep slopes.

140 Barriers, signage and (in some locations) lighting are essential for safety. On-going flexibility for such elements is needed to respond to changing circumstance. However the ULDF includes principles to minimise the 'visual clutter' of such highway furniture by reducing the variety of materials, seeking a common design language, using a recessive colour palette, and adopting a consistent spatial arrangement of such items.

141 Access to public open space will be maintained and improved: existing access to Queen Elizabeth Park will be unaffected. NZTA proposes to provide recreational access along the access track parallel to the Main Alignment which would connect Queen Elizabeth

Park with Battle Hill Farm Forest Park. As discussed above in relation to a suggested rest area at Wainui Saddle, the space constraints and steepness of the hillsides in Wainui Saddle and upper parts of Te Puka and Horokiri Stream valleys mean it is not practical to provide the pull-off and car-park that would be required for a climb to a lookout on the western ridge.

142 As discussed, while a transmission alignment through the Wainui Saddle would be preferable from a landscape point of view (albeit with adverse amenity effects for future road users) I understand it is questionable whether the line could be re-constructed through the saddle following road construction because of constraints of native bush on one side and the constraints of conductor clearance from the road on the other. The western bypass is the preferable alternative for reasons given above in my evidence. I investigated the hills above the saddle in conjunction with engineers and helped select what I considered to be the best alignment for this option.

143 I accept (as was noted in Technical Report 5A) that Tower 2A will be in a prominent location for travellers descending Te Puka Valley. To put it in perspective though, the transmission line will accompany the Main Alignment (more or less) between MacKays Crossing and Pauatahanui. The Main Alignment will also be in a box cut where it passes below the tower. On the other hand, relocating Tower 2A to the east side of the road would require an additional tower and two additional angles and therefore I do not recommend it.

144 **Submission No.25** (Waitangirua Community Park Design Team) includes a request to eliminate the proposed street trees on Niagara Street (adjacent to the community gardens and Waitangirua Mall car-park) for surveillance and vandalism reasons.

145 *Response:* The trees are intended to soften the edge of the car-park and improve what is a relatively low amenity streetscape. The suggested trees are *titoki* with clear trunks, which would not reduce sightlines. Using large nursery grade trees and pruning the lower canopy may reduce the potential for vandalism.

146 I recommend that the Park Design Team be consulted during detail design with a view to agreeing a design that enhances streetscape while maintaining passive surveillance and minimising vandalism concerns (see designation condition PCC.30 which provides for ongoing consultation in the preparation of LUDMPs).

147 **Submission No.29** (Wellington Regional Council) supports the NoRs, subject to conditions. Landscape concerns listed in the submission include the impact on its regional parks and consistency with the Regional Parks Plans.

148 *Response:* The submission does not detail the Council's concerns. Effects on the parks and consistency with the Parks Management Plans are addressed in Technical Report 5. While the existing designation traverses both regional parks, the proposed designation and Main Alignment has been fine-tuned to reduce potential effects on the parks, access is to be maintained on the existing tracks bisected by the road, and extensive mitigation planting carried out. The proposed planting was discussed with Council staff, and is designed to be consistent with non-statutory draft plans prepared by the Council for the parks[39]. There is opportunity to further tailor the planting to Council's wishes during preparation of the LUDMP(s).

149 **Submission Nos. 31, 36, 51, 52, 62 and 63** are similar and relate to six rural-residential properties on a private driveway off Rangatira Road. They are the only properties overlooking the proposed Kenepuru Interchange and Link Road from the eastern side of SH1. The submissions seek conditions including limiting vegetation removal and earthworks to that required to undertake the works, retention of particular existing pines and other trees for visual and dust screening, planting of further trees as soon as practical, and returning the site compound area to a rural character following construction. The submissions request a specific landscape mitigation plan that addresses the submitters' concerns.

150 *Response:* Most of these matters can be addressed. While vegetation clearance and earthworks will be needed to accommodate the site compound and construction access, a proportion of the pine stand on the southern boundary of the construction site and the plantation on the northern side of the site near the Kenepuru Interchange, should be able to be retained. A semi-rural character could be restored through tree planting and re-grassing following construction. I support an additional condition that the detailed mitigation plans forming part of the LUDMP(s) be prepared in consultation with the submitters with respect to the issues raised.

151 **Submission No.32** (The Guardians of Pauatahanui Inlet Inc) and **Submission No.35** (Pauatahanui Inlet Community Trust) support the Project but seek additional mitigation and offsets to address concerns that additional sedimentation or pollutants will enter the inlet.

152 *Response:* While sedimentation and water pollution are outside my expertise, I draw attention to the restoration of the balance of Lanes Flat to a native wetland. While this is primarily for landscape and ecological reasons, I understand it may also have benefits in reducing sedimentation and pollution from road run-off.

[39] Battle Hill Farm Forest Park Sustainable Land Management Plan, Belmont Regional Park Sustainable Land Use Plan.

153 **Submission No.33** (The New Zealand Historic Places Trust Pouhere Taonga (*NZHT)*) supports the Project subject to amendments to address concerns at three heritage sites.

153.1 The submission requests planting to screen the Main Alignment in views from the historic **Battle Hill military site** on the grounds that it affects the wider historic landscape setting. I do not consider screening is warranted for the following reasons:

(a) The site is a defensive location on a ridge. In terms of historic context the key views are to the south along the ridge from where the British troops launched their attack, and the approaches from Mataitaua pa along the valley further to the south. The Main Alignment, on the other hand, is to the east. It is 1km away and there is secondary intervening gully and low ridge (Gas Line Ridge); and

(b) While the Main Alignment will be part of the landscape panorama from the site, the landscape character is different from that of 1868. The native vegetation of that time has been converted to a settled landscape with buildings, roads, a transmission line, and a patchwork pattern of lifestyle properties, pasture and plantations.

153.2 While Technical Report 5 supported an earlier suggestion for planting on **St Joseph's Church** property, I confirm that no planting is now proposed on the property, in line with the NZHPT's recommendation.

153.3 The submission requests planting between the **WWII Fuel Storage Tank** in Te Puka Stream valley and the Main Alignment. There is existing native vegetation on the terrace between the fuel storage tank and the proposed Main Alignment box cut. I support an additional condition requiring additional planting to make good any edge clearances and gaps. The area around the tank is part of the land that is to be retired from grazing to enable regeneration.

154 **Submission No.41** (247B Flightys Road) supports the Proposal in part but seeks earth mounding and planting to mitigate views and noise.

155 *Response:* Planting is already proposed in Landscape Plan LA11. I support edge mounding on the embankment across the bottom of this property (between chainage 15000m and 15150m) which would soften views of the road (and also potentially avoid the need for side

barriers on the road). I recommend that such work be carried out as part of the LUDMP(s) in consultation with the property owners.

156 **Submission No.44** (Battle Hill Eventing Inc) is neutral but seeks conditions including the provision of new horse trails to offset any trails permanently lost as a result of the Proposal.

157 *Response:* No trails will be lost. The only existing trail affected is the 'Transmission Gully Puketiro Loop Trail' which is to be maintained by means of an underpass (Bridge No. 7) designed with a 5m internal height to accommodate horses (ULDF page 78).

158 **Submission No.47** relates to four dwellings and a consented fifth dwelling at 55 Collins Avenue ('Little Collins Street'). Technical Report 5 assessed the visual effects on these properties as 'very high'. The submission requests conditions requiring planting to be carried out along all the proposed noise walls adjacent to the property, and that the owners be consulted about such works during detailed design.

159 *Response:* I agree that planting is preferable in such situations to improve amenity and remove the potential for graffiti. In this case however the plans do not show sufficient space for planting adjacent to the noise walls at the scale the plans are drawn (Landscape Plan LA21). I understand from discussion with **Mr Edwards** that the road design might be fine-tuned at the detailed design stage in a way that would provide sufficient space for planting within the designation. Alternatively such planting could be located immediately outside the designation subject to the agreement of the owners. I support a condition that the planting and/or treatment of the noise wall be designed in consultation with the owners as part of the LUDMP(s), and out-of-designation planting is offered to the owners if necessary.

160 **Submission Nos.53 and 54** are identical and concern lifestyle properties at 129E and 129F Flightys Road. The submissions state that the Project will traverse the outlook to the north of the properties, and seek that the road be lowered to reduce visual effects.

161 *Response:* The proposed Main Alignment is already at a relatively low elevation through this area. The fill embankments north of chainage 15800m and south of 16300m are in shallow gullies and likely to be screened by intervening topography from the properties. The sections of the Project likely to be most visible from the properties are the tops of cut batters between approximately 16000m and 16200. Lowering the road further would have little benefit in terms of these batters.

162 **Submission No.67** relates to the property at 51 Paremata Haywards Road adjacent to the Transpower substation and directly across the road from the proposed Site Compound. Technical Report 5 assesses the effects on the property as 'very high'. The submission requests early establishment of evergreen screening vegetation around the proposed Site Compound prior to the start of construction.

163 *Response:* Planting of native evergreen species is proposed in Landscape Plan LA13 around the SH58 perimeter of the Site Compound (i.e. the perimeter most likely to be seen by the public). I agree such planting should be carried out as early as possible but it would need to follow the earthworks required to form the platform for the Site Compound. It is not proposed to plant on the perimeter of the Site Compound opposite the submitter's property (i.e. along the section of SH58 to be closed). Visual effects on the submitter's property would be best mitigated by fencing and planting its front boundary. The property falls within the designation so that such measures would be subject to agreement between the owner and NZTA. Issues relating to this property are discussed further in the evidence of **Mr Craig Nicholson**.

Gavin Craig Lister
17 November 2011