

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of a Board of Inquiry appointed under section 146 of the Resource Management Act 1991 to consider applications by Mighty River Power Limited for resource consents to construct, operate, and maintain a wind farm at Turitea

REBUTTAL STATEMENT OF EVIDENCE OF ALLAN WYATT

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1. INTRODUCTION

- 1.1 My name is Allan Wyatt. My qualifications and relevant experience are set out in my statement of evidence in chief. I repeat the confirmation given in that statement that I have read and agree to comply with the Code of Conduct for Expert Witnesses (July 2006). This rebuttal statement comments on, and responds to matters raised in the expert evidence on behalf of Tararua Aokautere Guardians / Friends of Turitea Reserve and Palmerston North City Council.
- 1.2 I do not propose to respond to each landscape and visual effect matter discussed in those statements of evidence. However, the fact that I do not respond to a point should not be taken as agreement to it. Rather, I have limited this rebuttal statement to what I consider to be the most important or otherwise notable aspects of the evidence to which I respond. I rely on my evidence in chief and this rebuttal statement to record my opinions on what I consider to be the relevant and significant issues, which I address below by way of topic groupings.
- 1.3 As appropriate I will draw from the Landscape and Visual Assessment (LS&VA) prepared as part of the Assessment of Environmental Effects and my evidence in chief, 1 May 2009 (my SoE).
- 1.4 In making these comments I have reviewed the Statements of Evidence received from:
- (a) Mr Clive Anstey (Anstey) for Palmerston North City Council (PNCC);
 - (b) Mr Jeffrey Baker (Baker) from PNCC;
 - (c) Mr Shannon Bray (Bray) for the Tararua Aokautere Guardians (TAG) and Friends of Turitea Reserve (FOTR);
 - (d) Ms Di Lucas (Lucas) for TAG and FOTR;
 - (e) Ms Katrina Hindmarsh (Hindmarsh) in a personal capacity; and
 - (f) Ms Isobel Gabites (Gabites) for FOTR.
- 1.5 For the sake of brevity I will use the above abbreviations to refer to the evidence of the relevant witnesses. Mr Stephen Brown (Brown) has also prepared a statement of evidence in chief for Mighty River Power and Mr Brad Coombs (Coombs) has prepared a statement in rebuttal. Quotes I provide from these statements will be similarly referenced.

1.6 There are a variety of issues raised in the statements of evidence noted above, and a number of ways in which they are addressed by the different witnesses. Accordingly, for the sake of clarity I have grouped similar concerns under the following categories.

- (a) Whether the landscape quality of this section of the Tararua Ranges renders it suitable to be classified as an Outstanding Natural Landscape (ONL);
- (b) The Methodology utilised within the LS&VA and my SoE. In particular I will deal with issues raised concerning:
 - (i) Turbine Grouping and “Community of Interest”;
 - (ii) Alleged photomontage errors;
 - (iii) Landscape units;
 - (iv) Viewpoint selection;
 - (v) Perception studies / focus groups;
 - (vi) Distance and turbine height;
 - (vii) The Reserves Act 1977 and its implications;
- (c) My assessment of effects, in relation to:
 - (i) Road users;
 - (ii) Public spaces;
 - (iii) Residential impacts;
 - (iv) Tracking and earthworks;
- (d) Cumulative effects.
- (e) Mitigation and planting.

1.7 In the following sections of this statement I will examine each of these issues in turn.

2. THE EXTENT OF THE OUTSTANDING NATURAL LANDSCAPE AREA

- 2.1 There seems to be broad agreement amongst the expert statements of evidence that while the “*minor landscape unit containing Hardings Park is close to being outstanding*” (Bray, para 73), Mr Brown’s analysis and my own conclusion in the LS&VA are correct that even the most sensitive adjoining area of the Ranges, namely Hardings Park, would fall within a “special amenity landscape character” and not an ONL under section 6 of the Resource Management Act 1991. The landscape on which the wind farm is to be located is to the north of Hardings Park and would also not be included within an ONL.
- 2.2 Mr Anstey reaches a similar conclusion that the site of the Turitea Wind Farm is not an ONL. For example, he states “*I generally support the assessment Mr Brown makes and his conclusion that, although not outstanding at a regional scale, the Turitea Landscape is an Amenity Landscape with values of considerable significance*” (Anstey, para 26). He goes on to say “*...I agree with Mr Brown that the Turitea Landscape may not be outstanding at a regional scale...*” (Anstey, para 31).
- 2.3 However later in his evidence he states that on the basis of my evidence in chief (and in particular para 68.25), I “*may be persuaded to agree with Mr Brown; at least from some perspectives the Turitea Reserve landscape is outstanding*” (Anstey, para 50). He further says that “*In my opinion there are large parts of the Turitea Reserve that do meet the criteria generally used to establish an area as an ‘outstanding natural landscape’, and Mr Brown agrees.*” (Anstey, para 119).
- 2.4 In fact, both Mr Brown and I reach quite different conclusions. For the sake of both clarity and accuracy it is important to repeat Mr Brown’s conclusion, with which I also agree, in full. He states:

“There can be little doubt that the Turitea Reserve, the adjoining Hardings Park and the northern reaches of the Tararua are highly significant, perhaps even outstanding, when viewed from within. Yet, the predominance of bare pasture, areas of plantation forestry and rural-residential development, together with scrub remnants, across the external slopes of the Tararua Ranges very substantially erodes such landscape values and the integrity of the northern Tararua Ranges as a whole. This situation continues at least until well south of Browns Flat, where the Forest Park starts to emerge as a more significant landscape entity in its own right. Because of this contrast between the more natural, forest dominated, ‘internal’ qualities of Turitea Reserve and its more modest periphery, the landscape of, and around, the proposed wind farm site – as a whole –

does not qualify as being outstanding in terms of section 6(b) of the Resource Management Act." (Brown, para 72)

- 2.5 For his part, Mr Baker notes this discussion and states "*In the end, this debate does not figure highly in my evaluation*" (Baker, para 68). It therefore appears fair to assume that either he also agrees with the evaluation that this area is not an ONL or that whether this classification applies or not is of minor consequence.
- 2.6 Ms Lucas on the other hand is a lone dissenting voice amongst the experts. She says: "*From my assessment and guided somewhat by the statutory regime as discussed below, I assess that the site is within an ONL.*" (Lucas, para 50).
- 2.7 However later in her evidence she conflictingly states that "*considering the whole site (see Mac [sic] Henry Exhibit MH1), I agree that it does **not** qualify as ONL. However at least the area within and beyond this site that has [sic] identified by Mr Brown as 'amenity landscape' in my opinion would more appropriately be identified as ONL, along with that of the Forest Park within and adjoining his delineation*". (Lucas, para 76, my emphasis). The lack of precision in this respect is not helpful, but I have proceeded on the basis that Ms Lucas tends to hold the former view more strongly.
- 2.8 More unfortunate is the fact that she misrepresents my views on the probable extent of the ONL, and states that my assessment "*addresses all of the hills as one*". (Lucas, para 62). In fact, I agree with Mr Brown's assessment – reached independently of my own – that the northern boundary of the ONL is located further to the south of the wind farm site. I don't intend to reiterate my assessment, given that is recorded in detail within the LS&VA. However, the graphic that accompanied that assessment shows the approximate northern boundary of the ONL, based on an assessment of where the forested ranges become visible from the surrounding plain (LS&VA, Figure 6.14, reproduced below as Figure 1). I stated that "*These southern Ranges have all the characteristics of an outstanding natural landscape and their approximate extent is shown in Figure 1.*" (LS&VA, Section 6.7).

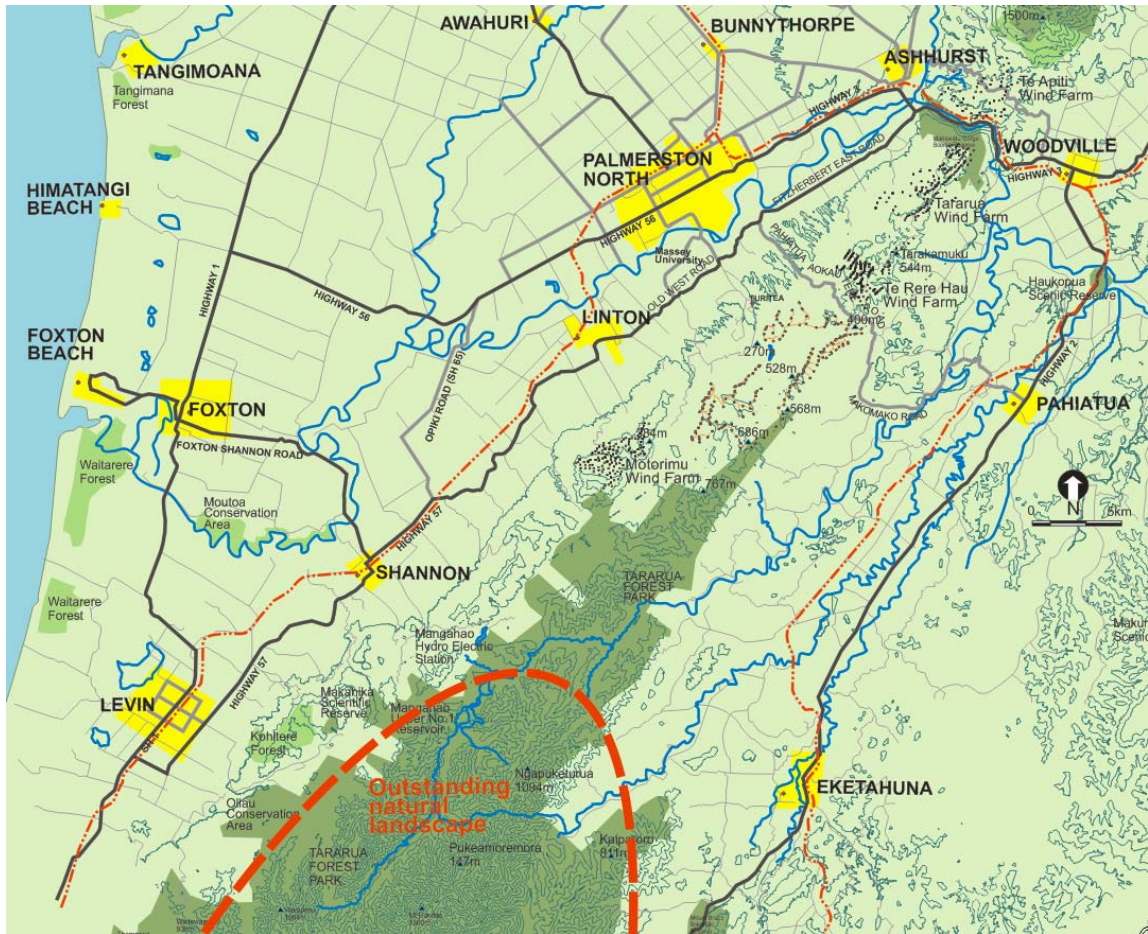


Figure 1 Outstanding natural landscape (Figure 6.14 of the LS&VA)

- 2.9 I also stated that “*whilst the actual delineation of the northern boundary of this area is approximate, it is clear that the Turitea Wind Farm is not located within an area that could be considered as an outstanding natural landscape for the purposes of section 6(b) RMA. However, the wind farm site would undoubtedly be described as lying within an area of high amenity value.*” (LS&VA, section 6.7)
- 2.10 This proposition generally accords with the views of the opposing experts (with the exception of Ms Lucas) and with the assessment of Mr Brown. I confirm both that proposition, and my opinion, and find nothing in Ms Lucas’ analysis that would tend to indicate, let alone persuade me, otherwise.

grouping of turbines per se. My participation in the “process of grouping” would therefore have been of no value.

3.5 My objection is founded on the fact that, whilst ostensibly appealing, I believe that any turbine grouping exercise has inherent flaws, and is essentially and unavoidably arbitrary in its selection and subsequent use. Generally, groupings such as this are undertaken from a “birds’ eye view” and there is nothing in Mr Bray’s evidence to suggest that this was not the rationale behind these designated groupings. As I will explain, the reality of ‘on the ground’ views to turbines is that apparent groupings, and the numbers of turbines within them, will change constantly as one moves from viewpoint to viewpoint.

3.6 By way of example, one alternative, but by no means a more logical grouping selection, is to select turbines in groups broadly based on a series of views along a road or from identified locations. Figure 3 below shows three such ‘cones of views’ along Kahuterawa Road.

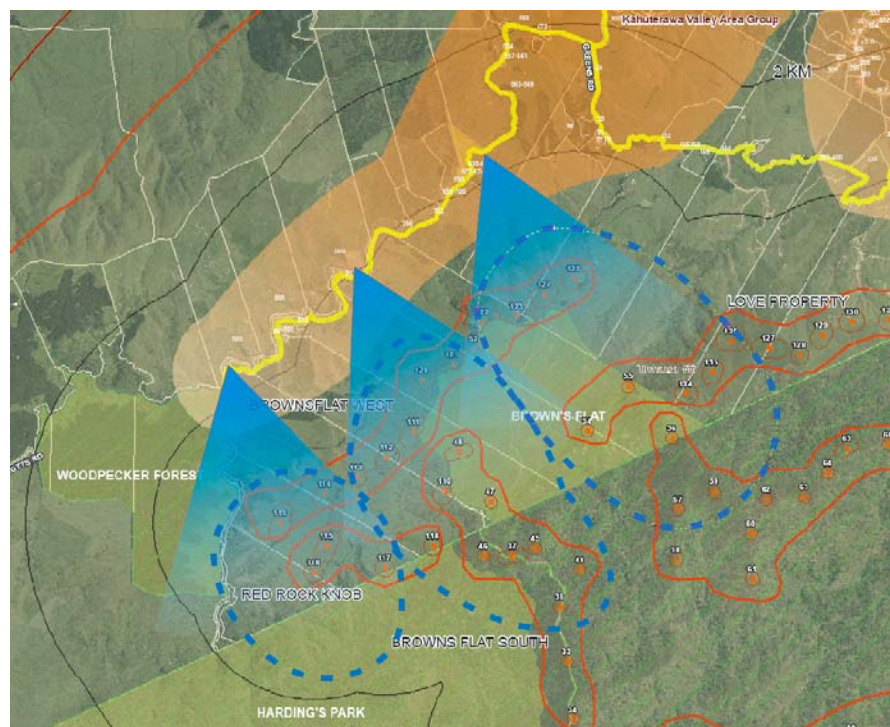


Figure 3 Alternatives groupings overlaid on Map 2

3.7 Each of these view corridors (the blue cones) is approximately 60° and then the turbines within this view cone have been grouped (the blue dotted lines). Again, this method of grouping could have been utilised, but obviously it too would change with the selection of alternative focal points. I strongly believe that assessments of wind turbines by groups are

- fatally flawed as groups differ markedly from each vantage point, according to distance, terrain, vegetation, the nature and extent of the built environment, and a host of other factors and influences.
- 3.8 As such, whilst there is superficial appeal in talking about the ‘Browns Flat West’ or the ‘Red Rock Knob’ group, in reality a viewpoint will, in most cases, have a range of turbines from different groups within a viewing corridor. By contrast, in all the photomontages I prepared, each *individual* turbine that is visible from the relevant viewpoint has been identified. I believe this is a far better and more thorough approach than stating (say) that from a specified location one is able to see some of Group A, a few of Group C, and some from Group F, and so on.
- 3.9 Therefore it is my strong view that grouping of turbines is both artificial and arbitrary, and does not aid in the informed assessment of visual impacts. I have avoided such simplistic assumptions in my analysis because of this, as I have done in analogous situations with respect to other wind farms. For example, in the recently completed Stockyard Hill Wind Farm visual assessment, which examined 242 wind turbines installed on up to 132m high towers, the wind turbines were not divided into groups. The only wind farm for which I have used groups or precincts has been the Yass Wind Farm, where three precincts were defined as the Coppabella Hills Precinct with up to 86 wind turbines, Marilba Hills Precinct with up to 66 wind turbines and the Carroll's Ridge Precinct with up to 30 wind turbines. Each of these precincts were approximately 5-10km apart, such that the use of these groups was both logical and appropriate in that case.
- 3.10 Similarly, I do not believe that the delineation of community groups, or “groups of interest” (eg a Kahuterawa Valley Area Group) assists the assessment of landscape and visual impacts. Residences within that group, and indeed all groups, share few similarities. They are at widely different distances (for example, the closest turbine from locations within the Kahuterawa Valley Area Group range from less than one kilometre to more than 5 km), and some of these residences would be orientated towards the north, away from the wind farm, versus towards the south or towards the wind farm. Groupings of residents do not, in my view, add clarity to assessment beyond that already evident in a road address.
- 3.11 Mr Baker states that he agrees with Mr Anstey that there are “*three local communities of interest*” (Baker, para 69). Again, these appear arbitrary, and the process for the selection and delineation of the three groups identified (Kahuterawa Valley, Turitea Valley-Ngahere Park and Pahiatua Aokautere Road) is not explained. In fact, I would have thought that Palmerston North, Ashhurst, Woodville and Pahiatua and other surrounding communities should also be included in such a process, but their exclusion is neither explained nor internally logical. Even had they been included, I do not consider their use to be of any value in assessing effects

- which, so far as practicable, needs to be done on a fairly representative basis, having regard to the usual considerations (terrain, vegetation, house / outdoor area orientation, and so forth).
- 3.12 For these reasons I do not agree with the arbitrary and simplistic grouping of residents, nor do I agree that addressing groupings of turbines is of any assistance in assessing a visual impact.
- 3.13 Nevertheless, to the very limited extent that Mr Bray shares his methodology and assumptions, it is clear he has based much of his assessment on the use of these groups. In some cases I agree with his conclusion, but not his analysis. I would also often add emphasis. For example, when looking at the Group A turbines (Bryant Hill West Group) Mr Bray states “*I find that the Group A turbines would be significantly dominating on the landscape, particularly from those people living in close proximity to Bryant Hill.*” (Bray, para 168).
- 3.14 Here, Mr Bray appears to be stating that wind turbines in close proximity to a residence (and visible from that residence) would have a significant visual impact. It is apparent from my assessment in the LS&VA and my SoE where I share that view, but it is critical to be clear that it is not Group A (for example) that has the impact, but rather those *individual* turbines that are (a) visible; and (b) close. Where I have stated so, I agree that such individual turbines would have a significant level of impact. However, to broadly base a conclusion about an entire, and arbitrarily selected grouping, based on worst case assumptions results in inaccuracy and overstatement by association. Again, I believe the use of such groupings demonstrably leads to inaccurate and imprecise assessments, and that has been my experience with the technique when used by others in Australia.
- 3.15 A similar comment can be made regarding Mr Bray’s conclusions regarding the Group B (Bryant Hill East) and Group C (Upper Pahiatua) turbines. Whilst, as noted, I generally agree that turbines in close proximity to residents can have a significant impact, this would need to be assessed more carefully than drawing conclusions from a grouping of turbines and residents. That is, it is subject not only to identification of which particular turbine or turbines can be seen, but to what extent they can be seen – this requires that regard be had to site-specific considerations and to personal responses and preferences.
- 3.16 Further, to simply state that “*the turbines would compromise the rural, simple character of the landform that contrasts so importantly with the more complex, developed terraces containing the Pacific Drive and Ngahere Park residential and lifestyle developments*” (Bray, para 168) does not add any clarity to consideration of the issues. It is a sweeping generalisation.
- 3.17 The wind turbines would definitely be an addition in the landscape. There is no evidence, however, supporting the conclusion that these would “compromise the landform”. The rural character will remain and continue under and around the wind turbines. I do agree that the

- landscape will change, however to broadly state that this compromises the landform is not a logical conclusion, especially with no consideration of viewpoints from which this would occur.
- 3.18 Turning to the comments on Turbine Group D (South Range Road Primary Row) and Group E (South Range Road Secondary Row) I am in general agreement with the statement that “*For the most part, I find the turbines in both these two groups, north of Marima (turbines north of 27 in Group D and all of Group E) to have less than minor effects on visual amenity. Distance is the main mitigating factor, as from most locations, east and west of the Ranges, the nearest residences or public viewpoints are greater than 2km*”. (Bray, para 188, my emphasis).
- 3.19 Turning to examine Mr Bray’s use of Groups F-K (Red Rock Knob, Browns Flat South, Browns Flat West, Game Ridge and Love Property) and part of Group D (South Range Primary Row, southern end of row, turbines 28-33), it seems to me that this amalgamation of some groups with part of another group makes it clear how inflexible groupings become when assessing visual impacts.
- 3.20 This assessment concludes with a statement I have difficulty interpreting. Mr Bray states that “*In my opinion, these turbines would occupy a distinctly new part of the landscape, and would lack coherence to the existing pattern of wind farm development. In other words I consider these turbines to be beyond the natural limit of windfarm expansion in this landscape.*” (Bray, para 205). That the turbines will occupy land not presently used for turbine placement is self-evident. Further, in the previous paragraph he states his view that “*the presence of turbines on the landscape around Brown’s Flat adds significantly to the overall occupation of turbines on the ranges.*” (Bray, para 204). These groups contain approximately 54 of the proposed turbines so it would be expected that they “*add significantly*” in the circumstances but, again, this is a point of no moment in and of itself.
- 3.21 In summary, I consider that Mr Bray’s use of groupings has led to simplistic assumptions of impact and analysis that are either not supported or which simply state obvious facts about physical change, without properly assessing the impact on the landscape. In other words, he has confused his project description with a method of assessment. The impact occurs, in part, from the location of a turbine or turbines *from a viewpoint or viewpoints*, and visual impact must be cognisant of this; to simply describe the impacts of Group X or Group Y presupposes *an* impact, but does not identify where the impact is, or might be experienced, and to what degree. This is because it is outward looking (from the turbines) rather than inward looking (to the turbines, from a viewpoint).

Photomontage “errors”

- 3.22 Mr Bray makes the assertion that “*it has come to my attention that there are some inaccuracies in the simulations, and I also believe that more could have been done to depict a truer reality*” (Bray, para 148). In part, it is difficult to comment on what Mr Bray means by “*truer reality*”, or how he considers it might be achieved.
- 3.23 Beyond that, however, I confirm that there are no inaccuracies in the simulations. For example, turbine 92 in RVP3 and turbine 133 in VP1 are both at the junction of a foreground ridge and a background ridge. Whilst it might appear that they are in the foreground, the intersecting ridge is exactly the same height at this point. At most, the turbine may appear several pixels longer, but that is in my view not material, and it is certainly not misleading. Further, irrespective of this, the apparent height of the wind turbine and its location in the base plan are both accurate. This is therefore not a question of accuracy as Mr Bray asserts (Bray, para 152) but rather one of where the base should be cut in the rendered version.
- 3.24 Ultimately, it is difficult to see what could have been done to “*depict a truer reality*” (Bray, para 148). I believe my methodology has been set out clearly, and in all community meetings where accuracy was questioned I have been able to demonstrate that the photomontages are accurate.
- 3.25 Even so, Mr Bray goes on to say that he is concerned “*about the difference in sky patterns*” (Bray, para 150). I consider that the photomontages simply reflect the range of conditions that were photographed on the days of our site visits. Where we have lightened the sky to increase contrast, this is noted on that particular photomontage. The range of sky conditions also illustrates the changing nature of the sky as a backdrop, an important factor in any consideration of silhouetting and visual contrast. To simply utilise only photographs taken on a “*fine day*” (Bray, para 150) would be both selective and misleading, and I could not disagree more with Mr Bray with respect to there being anything in this point.

Landscape units

- 3.26 Mr Bray states that “*in principal I agree with the large scale units [Mr Wyatt] has described, but make the comment that these tend to be based on land use more than land form.*” (Bray, para 229).
- 3.27 I disagree with the assertion that the landscape units I used are based more on land use. In fact, the four main landscape units (Cleared flat farmland, Vegetated flat farmland, Cleared ranges, Vegetated Ranges) are equally divided between vegetation cover and topography. However, it is also a fact that land use is a reflection of the underlying topographical

vegetation associations, and farmland has understandably tended to be concentrated on the flatter areas, especially those with rich alluvial soils such as occur alongside the Manawatu River.

3.28 I also consider that Mr Bray demonstrates a degree of misunderstanding of these landforms when he states that the area of foothills between Bryant Hill and Pahiatua-Aokautere Road “*is valued for its simple, rural character that contrasts strongly with the more developed plains and Pacific Drive terrace. The foothills create a natural boundary to urban development, and Bryant Hill is an aesthetically important local landmark.*” (Bray, para 245).

3.29 This claimed division between the foothills and ‘urban’ development is not correct. Pacific Drive is not on a terrace of the Manawatu River, but rather is a continuation of a low ridge that extends in a north westerly direction from the Ranges. Bryant Hill is a local high point on the same ridge on which the Pacific Drive residential subdivision has occurred.

3.30 This is clearly shown on Figure 4 below. The foothills in this section do not create a “natural boundary” to urban development. In fact, recent urban development has occurred *in* these foothills, including the Pacific Drive and Polson Hill Drive examples that are apparent in the 3D view. The existing Pacific Drive development is planned to extend closer to both the Ranges and Bryant Hill along the same ridge.

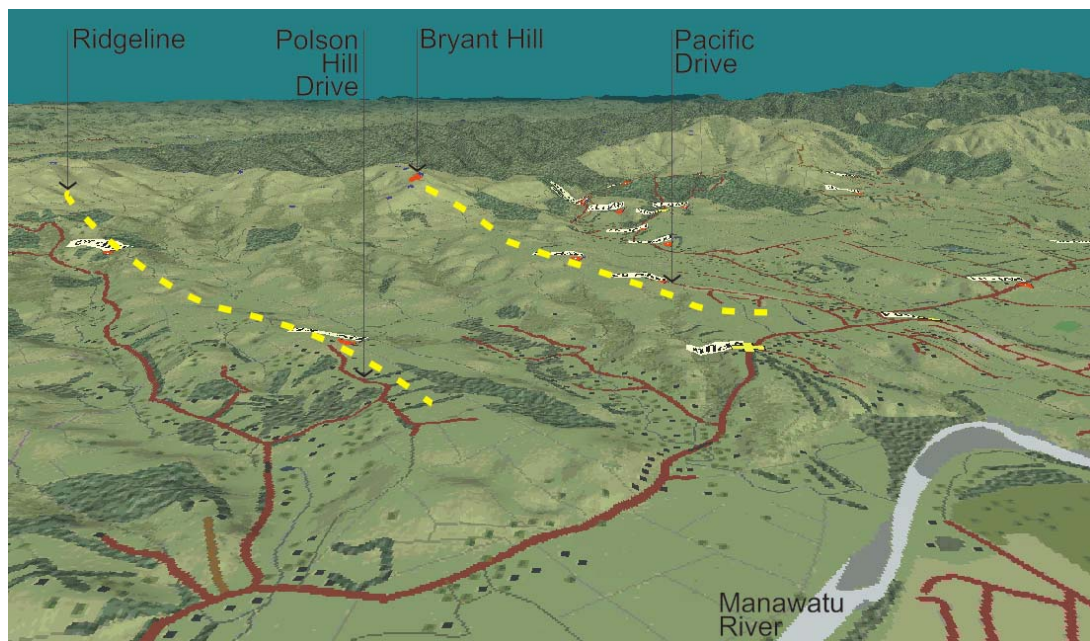


Figure 4: *Elevated view over Aokautere Drive to Bryant Hill (Based on a screen capture using Memory Map, North Island 50K, © Crown Copyright Reserved, Land Information, New Zealand)*

- 3.31 As noted in the LS&VA, the “rural foothills” already contain both rural and urban development. It is the proximity of this urban development to the wind farm that has the greatest potential to create visual impacts.

Viewpoint selection

- 3.32 Mr Baker states that “*to obtain a good appreciation of visual effects it is necessary to ensure the viewpoints are selected with a bias towards viewsheds which have the greatest number of viewers and ensure a fair representation of close distance viewpoints.*” (Baker, para 64(d)). I agree with this statement, but strongly disagree with the assertion that this has not been done: “*While Mr Wyatt later submitted simulations closer to the windfarm site, in my view his assessment does not sufficiently recognise the extent of adverse effects in this range which includes such a high number of dwellings.*” (Baker, para 64(d)).
- 3.33 For the sake of completeness, I note that in addition to the table listing 10 Viewpoints (acknowledged by Mr Baker) the following viewpoints were included within my SoE. The first additional photomontages were from the public domain and were:
- (a) VP11 – Awapuni Racing Club (9.19 km);
 - (b) VP12 – Rugby Ground (8.9 km);
 - (c) VP13 – Waterloo Park (5.67km); and
 - (d) VP14 – Palmerston North Golf Course (7.15 km).
- 3.34 Furthermore, there were a large number of residential properties visited, which are also not acknowledged by Mr Baker in his evidence. These were:
- (a) RVP1 – 34 Summerhill Drive (5.2 km);
 - (b) RVP2 – 126 Pacific Drive (3.0 km);
 - (c) RVP3 – 406 Pahiatua Track (1.1 km);
 - (d) RVP4 – 562 Turitea Road (deck) (1.1 km);
 - (e) RVP5 – 562 Turitea Road (rear garden) (1.1 km);
 - (f) RVP6 – At the end of Oram Drive (2.2 km);
 - (g) RVP7 – Oram Drive near Ngahere Park Road intersection (1.9 km);
 - (h) RVP8 – Opposite 48 Kahuterawa Road (4.9 km);
 - (i) RVP9 – Opposite 434 Tennent Drive (6.0 km);
 - (j) RVP10 – 297 Kahuterawa Road (2.4 km);

(k)	RVP11 – 16 Pineland Drive (Conservatory & Upper Floor)	(1.5 km);
(l)	RVP12 – 83 Ngahere Park Road	(1.5 km);
(m)	RVP13 – 39 Guyland Drive	(2.0 km);
(n)	RVP14 – 307 Ngahere Park Road	(1.9 km);
(o)	RVP15 – 291 Kahuterawa Road	(2.6 km);
(p)	RVP16 – 297 Kahuterawa Road	(1.1 km);
(q)	RVP17 – 789 Makomako Road	(2.2 km);
(r)	RVP18 – 6 Eisings Road (no house)	(2.2 km);
(s)	RVP19 – 933 Makomako Road	(1.3 km);
(t)	RVP20 – 24 Greens Road	(1.2 km);
(u)	RVP21 – Kahuterawa Road	(1.6 km);
(v)	RVP22 – Pacific Drive	(2.4 km);
(w)	RVP23 – Ridgeview Road	(2.0 km);
(x)	RVP24 – Kingsdale Park Drive	(3.67 km);
(y)	RVP25 – 280 Polson Hill Drive	(2.97 km).

3.35 Most of these additional 25 viewpoints (addressed in my SoE) were from locations within 3.5 km of the nearest wind turbine. However, Mr Baker appears to be unsatisfied with this – he states “*By way of contrast, Mr Anstey and I undertook extensive studies from numerous locations within the 3km range*”. (Baker, para 64(d). If this was the case, then neither the analysis and the findings from these “extensive studies”, nor the locations of the “numerous locations” appear in the evidence of Mr Baker or of Mr Anstey. Even if they did, I am satisfied that my viewpoint count and analysis is appropriately thorough and representative.

3.36 Mr Baker also carried out a count on the number of residential properties within 3 km (Baker, para 64(d)) and this is repeated and added to in the evidence of Mr Anstey (Anstey, para 68). Their evidence in fact addresses far fewer residences than those within Table 6 of my SoE. In my opinion, Table 1 below gives a more accurate assessment of the house numbers surrounding the wind farm.

Table 1 Participatory and Non-participatory houses (Table 6 in my SoE)

Distance from house to its nearest wind turbine	Participatory Houses	Non-participatory houses	Total
1.5 km	12	50	62
1.5 km to 3.5km	2	481	483
TOTAL	14	531	545

3.37 In my SoE I reiterated that I believed the greatest potential impact is on neighbouring non-participatory residential properties, and twenty five were then assessed on a representative basis. Mr Anstey recognises that I have “chosen a range of the potentially most effected [sic] properties nearest to the turbines” (Anstey, para 87), and so I again find that Mr Baker’s concern is not well-founded.

Perception studies / focus groups

3.38 Mr Anstey states that “I would agree that surveys show a high level of support for wind farming, but there have been very few surveys exploring the location of turbines in order to uncover what people believe to be “the most sensitive of locations”.” (Anstey, para 115).

3.39 However, he has not commented on the recent research undertaken for the Turitea Wind Farm (Research New Zealand), which found very similar levels of support to other studies quoted in the LS&VA, as noted in my SoE. For ease of reference, a bar chart summarising some of these results is repeated as Figure 5 below.

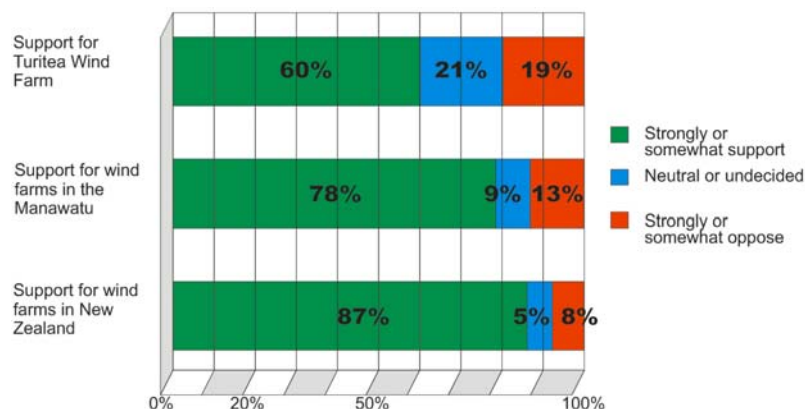


Figure 5: Perception of wind farms in New Zealand (from data collected by Research New Zealand, March / April 2009)

- 3.40 I note that the results of the above research are consistent with the Australian and European results for regional and country-wide support for wind farms (to the extent that they essentially replicate them). The data in Figure 5 also shows a level of support for the Turitea Wind Farm at 60% for residents within a 15 kilometre radius of the project area, which would be the most sensitive location for respondents.
- 3.41 The methodology used within the “*Public Perceptions of the Proposal to build a Wind Farm at Turitea*” (Research New Zealand, April 2009) contrasts with the lack of any clear methodological framework for the propositions put forward by Mr Anstey. He reports on the views of four meetings with “focus groups” (Anstey, para 34), without explaining whether these were representative of supporters, objectors or of any particular part of the community. He also does not give any indication of other meetings with groups of people in other areas around, and at varying distances from the wind farm site, so it is not even clear whether his propositions are representative in *any* sense.
- 3.42 Nevertheless, Mr Anstey concludes that “*the responses of residents confirmed the high level of significance Mr Browns [sic] assessment placed on the amenity values of the foothills, the Turitea Reserve, and the Tararua Ranges.*” (Anstey, para 37). Beyond this rather obvious ‘confirmation’ and a list of factors, his evidence in this regard gives no testable data on the community’s perception of / support for / opposition to wind farms in this landscape. I do not believe it “*completes the analysis of the landscape context provided by Mr Brown*” (Anstey, para 35), in fact it adds little information that would be relevant in assessing the impact of a wind farm on these residents or others within these so-called “*foothills communities*”, and in my view reliance on these meetings as a foundation for an extrapolated assessment of effects is deeply flawed. This latter issue is addressed in more detail in separate statements of rebuttal evidence prepared by Dr Phillips, Mr Kalafatelis and Ms Burns.

Distances and the zones of visual impact

- 3.43 The varying zones of visual impact have long been a contentious issue. Mr Anstey quotes my zones (Anstey, para 51), namely 0-1.5km, 1.5 – 3.5km 3.5-8km and 8-18km. The rationale behind these is given in the LS&VA. I also note that these zones may change, and the ranges may increase, for different wind farms as turbine heights also increase.
- 3.44 Mr Anstey also quotes the visibility tables used by Boffa Miskell, and states that the tables were developed to assess turbines up to some 95 m in height. Within those tables, the three closest zones in those tables are 0-1km, 1-3km and 3-6km, and are approximately the same as I would use for wind turbines of a lesser height than is proposed for Turitea. In any case I

- consider the ranges I have used to be more conservative than the Boffa Miskell table, such that in my view the turbine height difference is of no great consequence to my analysis.
- 3.45 Mr Anstey goes on to state that *“turbines of 125m have the potential to dominate the landscape out to 3km at least”*. (Anstey, para 53). I would agree that this potential exists, and in fact have used a figure of 3.5 km to ensure the point was addressed conservatively.
- 3.46 I also agree with Mr Anstey that there is some potential for the Turitea turbines to be prominent out to 8 km. However, I certainly do not agree at this distance they would or could “dominate the landscape” for the reasons outlined in the LS&VA.
- 3.47 Mr Bray expresses a similar view when he states that *“I find the turbines in both these two groups, north of Marima (turbines north of 27 in Group D and all of Group E) to have less than minor effects on visual amenity. Distance is the main mitigating factor, as from most locations, east and west of the Ranges, the nearest residences or public viewpoints are greater than 2km”*. (Bray, para 188, my emphasis).
- 3.48 In summary, my assessment has been more conservative than the Boffa Miskell zones, and has recognised that between 1.5km to 3.5 km wind turbines of the height proposed are *“Visually evident and will potentially dominate the landscape”*. (LS&VA, para 5.1 and table 5.1).
- 3.49 Mr Bray also gives no alternative basis for assessing the zones of visual influence, he simply inserts a table (missing the 6-10km band) and states that this *“matrix has been presented at a number of hearings (alongside a Scottish example known as the Sinclair Thomas matrix).”* (Bray para 118). The Sinclair Thomas Matrix is much more conservative than either the Boffa Miskell zones or the zones that formed the basis of the LS&VA.
- 3.50 The rationale behind the zones of visual influence used within the LS&VA was clearly set out in Appendix B to the LS&VA, *“Wind Turbine Viewshed based on the parameters of human vision”*. This notes some simple physiological facts about angle of view with respect to the heights and widths of turbines. This methodology explicitly links turbine height and the zones of visual influence. There has been no alternative procedure or methodology put forward by any of the other expert landscape witnesses, and I stand by the calculations and the zones of visual influence set out in the LS&VA.

Turbine heights

- 3.51 Turbine design and heights have changed greatly over the years. The earlier lattice towers have evolved into *“the smooth and somewhat sculptural rotation of the three bladed*

machines". (Bray, para 95). In the same paragraph of his evidence, Mr Bray states that the two bladed machines have a "*distinctly network utility appearance*". Whilst I do not support this description, particularly if he intends that it somehow distinguishes modern turbine designs as non-network utility, or less network utility in appearance, I would agree that the movement of the two bladed machines can appear disconcerting, especially when viewed from nearby.

3.52 However, the existing wind farms near Palmerston North also illustrate how the increase in heights with modern turbines has also reduced the "picket fence" appearance that resulted from the close centres of these earlier, shorter wind turbines.

3.53 Therefore, I strongly disagree with the assertion that "*should any further wind turbines be consented on the skyline ridge south of the Track, then these should closely resemble the design of the Te Apiti and T3 turbines, and therefore a maximum height of 110m would be more appropriate.*" (Bray, para 97).

3.54 In fact this misses what I consider to be the obvious advantage of the proposed increase in turbine heights which is apparent when looking at the existing turbines on the Ranges. The earlier, shorter, smaller wind turbines spin faster and are located much closer together. They more clearly accord with the derogative description that they create a "picket fence" on the ridge line, and their movement is less pleasing to the eye.

3.55 The newer larger turbines are spaced at much greater centres. They also spin more slowly and have a less frenetic appearance than the earlier, shorter wind turbines. This is apparent close to the turbines and from vantage points particularly out to 3.5km.

3.56 For these reasons, I strongly disagree that there should be an arbitrary maximum height of 110 m as suggested by Mr Bray.

Reserves Act and its implications

3.57 Ms Lucas recognises the difference between Hardings Park and the Turitea Reserve. She describes Hardings Park as follows: "*An 868 ha area, referred to as Hardings Park but perhaps not with surveyed boundaries, was gazetted in 2003 as Scenic Reserve as per s19(a) of the Reserves Act (attachment 9). The rest is a local purpose reserve having the protection and management of scenic features as a "Secondary Objective" (Turitea reserve [sic] Management Plan., TRMP Pt2 1.2 Table 2).*" (Lucas, para 97).

3.58 However, she then goes on to claim that "*the landscape architects for MRP have not addressed the Reserve Act dimensions such as the scenic protection requirements that apply to much of the site of the proposal.*" (Lucas, para 104). She further states that "*The natural*

scenic values of Hardings Park would be significantly affected by at least half of the proposed turbines through their location within and around the Park” (Lucas, para 173). I am unsure what Ms Lucas is driving at here. No turbines are proposed, or indeed allowed, within the Scenic Reserve. In addition, having made inquiries of counsel regarding the Turitea Reserve Management Plan 2006 (which I have also examined), it is also not clear what “scenic protection requirements” Ms Lucas has in mind.

3.59 Although I accept that the Turitea Reserve Management Plan is a document which the Board of Inquiry may have regard to (if it considers it “*relevant and reasonably necessary to determine the applications*”; section 104(1)(c)), from a landscape and visual effects perspective I do not consider that it has anything close to the relevance or weight assigned to it by Ms Lucas. For one thing, as I have noted, no turbines are proposed within the Scenic Reserve area (Hardings Park), such that as I understand it (and as legal counsel notes in submissions) section 19 of the Reserves Act has no application.

3.60 Secondly, the Local Purpose Reserve area within which turbines are proposed to be located is recognised within the Reserve Management Plan to be amenable to “*electrical generation activities that do not compromise the reserve’s function as a water supply catchment and ensure effects and [sic] other values are appropriately mitigated*” (Section 8, Objective 1). The policies that follow from this objective also make it clear that “*the Resource Management Act is the appropriate legislation to control external impacts from the development of a [sic] large scale electricity generation in the reserve.*” This latter point is reinforced in the landscape protection “explanation” under Section 4.6, and by the earlier Objective 5 (Section 4), which provides:

*“To preserve and where practicable enhance the natural landscape values of the reserve, **except where another objective in this plan is pursued in which case the impact on landscape values will be mitigated.**”* (my emphasis)

3.61 Given that another objective – the installation of “electrical generation activities” – plainly *is* being pursued the sole relevant question is whether, within the area to which the Reserve Management Plan applies, the impact on landscape values will be mitigated. In my view, and bearing in mind that public access to the Local Purpose Reserve area is limited to seasonal hunting licensees, the answer to that question is ‘yes’. In all these circumstances, there is no ‘protection’ issue of the nature Ms Lucas asserts, and in my opinion she has grossly overstated the significance of the Turitea Reserve to landscape and visual analysis in my opinion.

- 3.62 Turning briefly to Mr Anstey's treatment of these issues, I note that he too has referred to some of the Reserve Management Plan provisions I have quoted above. He then goes on to rely upon "*an Action attaching to the policy*" ("*no landscape intrusion into Hardings Park permitted*"), and expresses the view that turbines on the boundary of Hardings Park would constitute a significant intrusion.
- 3.63 I understand that the changes made to the Reserve Management Plan were separately litigated, and I do not consider it appropriate for me to revisit the issues traversed in that process. However, I do note that immediately above the action point Mr Anstey quotes is the following observation:
- "the installation of a windfarm in the water supply catchment area will have an impact on the landscape values of the reserve."*
- 3.64 With respect to Mr Anstey, the action point needs to be read consistently with that acceptance. I do not think that more can usefully be said of this issue, other than that I remain comfortable with my assessment of acceptable impacts on the landscape values of the reserve and Hardings Park in particular.

4. THE ASSESSMENT OF EFFECTS

Road users

- 4.1 Mr Anstey has taken issue with my analysis of potential effects on road users. I intend to address the main themes of his comments, rather than addressing each individual viewpoint.
- 4.2 There seems to be an underlying assumption in many of Mr Anstey's comments, when analysing the viewpoints from roads, that the mere visibility of wind turbines somehow 'destroys' the Ranges.
- 4.3 For example, when Mr Anstey discusses the views down Fitzherbert Avenue, he states that "*It is also the ranges, in combination with street trees, that provides relief from the cultural clutter of the urban environment, the kind of clutter in the foreground of this simulation*". (Anstey, para 59). The Ranges will remain if the Turitea Wind Farm is constructed. They will continue to provide relief, if that is what they do now. Alternatively they will continue to terminate the vista for a driver or a pedestrian travelling south east along Fitzherbert Avenue, albeit in a changed way.
- 4.4 Turning to his comments on the potential impact on views along Fitzherbert Avenue, I agree that the view down Fitzherbert Avenue is framed by development and street trees. However this particular "view shaft" (Anstey, para 59) clearly has not been "*fiercely protected*" given the nature of signs and banners that compromise and sometimes block the view. In my view this is a normal part of urban life, and is acceptable because the views experienced by road users regularly involve changes, and these changes occur along routes to and from work for a variety of reasons.
- 4.5 Nevertheless, I have consistently recognised the distinction between impacts on viewers utilising the road network and those from viewers on residential properties. For example, I stated that "*at this location (VP5 Ngahere Park) the juxtaposition of the stark cleared hills and the wind turbines may well create for most people a pleasing view. However for residents at this location who dislike the appearance of wind turbines the impact will be much higher. For these reasons it is considered that the wind farm would create a minor adverse effect for the public users of Ngahere Park Road.*" (LS&VA, Section 8.5, page 69, my emphasis).
- 4.6 To simply state that from a selected viewpoint "*turbines are clearly overwhelmingly dominant in this view, with no mitigation*" (Anstey para 64) simply states the obvious, and ignores the fact that this location was *deliberately* chosen as one to illustrate a viewpoint with no intervening vegetation, and thus "no mitigation". Other locations, in the public domain and in the same area, do have existing roadside vegetation and therefore the views to the wind farm

are wholly or partly screened in those places. Even so, this is not necessarily “mitigation”. As noted previously, however, I do not believe mitigation is always necessary as many viewers find the juxtaposition of the wind turbines on hills to be appealing. For this reason the LS&VA makes it clear that additional landscape mitigation is not proposed for road side verges of roads such as Ngahere Park.

- 4.7 Mr Anstey also attempts to make some capital out of the vehicle count numbers, a matter I do not, as a general point, agree with. For example, in the LS&VA I have made clear my assumptions and observations, and for the sake of clarity I reiterate the following statement from that assessment:

“Viewer numbers are rated as high, medium or low. For publicly accessible viewpoints the assessment of a high, medium or low viewer numbers are made on the basis of the road which provides access to the particular viewpoint under consideration. State Highways and roads within townships are assessed as having “high” number of users or viewers, while local connector roads are given a “medium” rating. “Low” viewer numbers apply to small local roads and other infrequently visited viewing locations.” (LS&VA, Chapter 8, page 54).

- 4.8 Whilst I am not a traffic engineer, where I have been given traffic volumes I understand that minor collector roads are those roads which cater for up to 3,000 vpd and usually provide a link between the internal access street system of a residential precinct and the major collector roads. Major collector roads cater for up to 5,000 vpd (sometimes 6,000 vpd is also used) and these provide a link to the principal traffic carrying arterial roads within an urban neighbourhood.

- 4.9 If an attempt is to be made to ‘redefine’ viewer numbers based on traffic volumes, then I would expect arterial roads and State Highways to be the roads of highest viewer numbers. Major collector roads would generally be considered to have medium viewer numbers, whilst minor collectors and local streets would have low viewer numbers.

- 4.10 For example, in commenting on views from Ngahere Park (VP5), Mr Anstey gives the figure of 1230 vpd on Turitea Road, which serves Ngahere Park. That road leads to Ngahere Park Road, which is a small, ‘no through traffic road’ serving few dwellings. The traffic volume on that road would be far less than those quoted for Turitea Road. In all the circumstances, I stand by my assessment (which is only partly based on these low viewer numbers), and consider that Mr Anstey has overstated the potential effects when he describes them as *“adverse, and more than minor; turbines would be extremely intrusive for those who live in the Turitea Valley and Ngahere Park”*. (Anstey, para 64).

- 4.11 Mr Anstey also comments on Viewpoint 4, Turitea Road and Viewpoint 6, Aokautere Road. Taking each in turn it is clear to me that the overall visual impact that was considered as minor within the LS&VA is still correct. This is because the traffic volumes for Turitea Road (2,200 vpd, Anstey para 63 and 1230 vpd, Anstey, para 64) are *less* than the figure of approximately 3,000 vpd I would expect on a minor collector road, and on which I based my assessment and conclusions. In Viewpoint 4, Turitea Road, the view is across a largely human modified landscape, with a power line in the middle distance. As such, whilst it appears that the road user numbers, at least along part of the road, are approaching 3,000 vpd, I would assess the overall visual impact as minor because:
- (a) The viewer numbers are not significant;
 - (b) The landscape sensitivity is medium; and
 - (c) The distance to the nearest turbine is approximately 1.5 km (putting aside the question of dwelling orientation, intervening vegetation and terrain, and similar considerations).
- 4.12 Whilst the traffic volumes for Aokautere Road (3,650 vpd, Anstey, para 65) are slightly higher than I expected (3,000 vpd), the view is across a human modified and cleared landscape. Buildings and other forms of built infrastructure are visible at the base of the Ranges. Again I would still assess the overall visual impact as minor. An important consideration here, I believe, and one not addressed by Mr Anstey, is that a number of the roads he has considered (and given vpd figures for) run roughly perpendicular to the Turitea wind farm site. This means that approximately 50% of the vehicles in question will have been driving away from the site, such that visual impacts on occupants should not figure in assessment. By the same token, bare vpd figures do not tell us how many occupants any given vehicle may have had, and one would rightly expect (for example) that a significant proportion would be single occupant vehicles, with the driver's attention focussed primarily, if not solely, on the road and other road users. Again, I do not consider that the prospect of visual effects on such occupants carries much weight.
- 4.13 A further point is that the ridgeline on which the wind turbines are located will mean that the wind turbines are visible. Where I disagree with Mr Anstey is that "*At this viewing distance (4 km) the turbines clearly dominate the landscape and have adverse visual effects.*" (Anstey, para 65).
- 4.14 The wind turbines will definitely be visible on the ridges, although the ridges will still be the dominant element in the landscape, and this is supported by the conservative photomontages prepared as part of the LS&VA.

- 4.15 Mr Anstey's subsequent claim that 'visibility' will necessarily create an "adverse visual effect" for the majority of the population is, I believe, unfounded and without any supporting assessment or evidential basis.

Public spaces

- 4.16 The next area of concern raised by Mr Anstey I will address is the impact from public spaces. Mr Anstey states that "*I also take issue with Mr Wyatt's claim that there are limited views of the ranges from Palmerston North*". (Anstey, para 57). He then mentions the reserves and the paths on the edges of urban development from which the wind farm will be visible.
- 4.17 I have acknowledged that the wind farm will be visible from these locations, and the potential impact on viewers at them is further acknowledged and assessed within the LS&VA and my SoE. Additional viewpoints in my SoE examine additional public spaces, however I maintain my observation that it is still surprising how often vegetation and built development screen the views to the Ranges from many areas within the city.
- 4.18 The large reserves referred to by Mr Anstey do afford views to the Ranges because of the large cleared spaces in the foreground. However, this large cleared space, whether sporting oval or race track, is also the focus of attention of users of that space. Mr Anstey acknowledges this focus but also states that "*Events are sporadic; there are long intervals.*" (Anstey, para 66) and claims that I have understated the impact.
- 4.19 I do not agree. In my opinion, the impact at this distance from these locations is minor and I further believe that such an assessment is in fact conservative. For many people the presence of the wind farm in the distance may be an attraction, bearing in mind the fact that the primary reason for viewers being present is to view what they are either participating in, or watching. Mr Anstey has not provided any data linking presence at a sporting event with the likelihood of wind turbines at some 5.7km distance creating an adverse effect of any consequence on the spectators or the participants, and I consider it doubtful that such data would exist.
- 4.20 For these reasons I stand by my conclusions within the LS&VA and my SoE regarding the relatively low level of visual impact one would expect from such locations.

Residential impacts

- 4.21 There is also confusion in Mr Anstey's analysis that the views from the roads must necessarily equate with the views from residences. It is correct to assume that residents will see the wind turbines from various roads as they "*returned home each day*" (Anstey, para 63). However,

- the distinction needs to be clearly made between the impact of a view from a public road and the view from a residential private open space or from the dwelling itself.
- 4.22 My assessment of the impacts on viewers from dwellings has been made on the assumption that the occupants will not find wind turbines attractive. In many cases I have assessed the view where it is unscreened and visible from living areas or outside recreation areas as “more than minor” consistently with this approach.
- 4.23 Before moving on, I note that Mr Anstey insinuates (rather than specifically asserts) that I have made an error in my use of the phrase “more than minor”. At para 58 of his evidence, he states *“In spite of acknowledging that the visual effects are more than minor Mr Wyatt finds them acceptable.”* Mr Anstey correctly records my view, but his use of the words “in spite of” suggests that he does not see the two propositions as compatible. If that is the case, then I definitely part company with him.
- 4.24 First, the different categories of effect, and my use of them, are clearly explained in both the LS&VA and in my SoE (see pages 54-55, LS&VA, and para 10.13, SoE). Secondly, I understand that whilst “minor effect” has become common currency as a threshold for assessing effects under the Resource Management Act, it is in fact only a genuine threshold in relation to non-complying activities under section 104D. In this case, by contrast, none of the consent applications at issue are in that category. Accordingly, the appropriate question is whether the level of assessed effects is such that I and other experts consider them to be acceptable, bearing in mind the purpose of the Act, and the overall balanced judgment that must be brought to bear on the proposal as a whole.
- 4.25 With that background in mind, I am completely comfortable with the conclusions I have reached *and* the way I have expressed them. That point made, I now return to discussion of residential impacts.
- 4.26 In my SoE I clearly set out my reasons for not automatically attributing a “high or unacceptable” level of impact. Again, it is worthwhile re-iterating these reasons as they highlight a difference in approach, and the fact that I have explained the basis for my assessment whereas Mr Anstey has not.
- 4.27 In my SoE I stated that *“given that some residential occupants will object to the presence of wind turbines within views from their property, where the turbines are close, typically within 1.5km, an initial simplistic assessment would be a “High or unacceptable adverse effect”. However the assessment of “High ...” depends upon an assumption that the adverse effect cannot be “avoided, remedied or mitigated”. (SoE, para 11.11).* I then went on to explain that *“Where measures may be adopted (if desired by the land owner) to mitigate such effects, then*

the rating of a “More than minor effect” is appropriate, while still recognising the significant level of visual impact.” (SoE, para 11.12).

- 4.28 In many of the residential assessments the end result was a “more than minor” level of impact. In contrast, Mr Anstey claims that in his opinion *“this change would be adverse, more than minor, and have unacceptable consequences.”* (Anstey, para 96). His evidence implies a “high” and *therefore* “unacceptable” level of impact based on his conclusion that the *“development of a wind farm of this scale and intensity would substantially change the whole experience of living, working and just being in the foothills environment.”* (Anstey, para 96). I do not believe that this conclusion is supported by sufficient analysis to show that the change is unacceptable, and that furthermore it is not possible for effects deriving from that change to be mitigated. I have acknowledged that may be the case in some circumstances; however such an acknowledgement does not necessarily lead to a blanket assessment of the kind Mr Anstey contends for.
- 4.29 It is also necessary in my view to explain an important difference between the visual assessment of a wind farm and a more typical visual assessment of (say) an adjoining development. In most visual assessments, if a development occurs between the viewer and a view, then the view is lost. Mitigation measures, which often include landscape treatments, attempt to provide a different “view”. For example, a residential development on the boundary, or an industrial building, both impede views, and in many instances completely remove a view. Wind farms are different. Even after construction it is still possible to enjoy views, say to the Manawatu plain, even though one must look through or under wind turbines, or simply *at* them on the existing landscape. There is most definitely a change, however the view in this case is not blocked, it is just different.
- 4.30 Therefore, an owner contemplating the acceptability of mitigation measures – which could include boundary planting, must balance the impact of the wind turbines on them against the degree of value they place on the view.
- 4.31 Mr Anstey claims that *“Mr Wyatt proposed that with appropriate planting the adverse effects could be mitigated. In my view this is fanciful, not just because planting will often not be practical or acceptable to residents, but because the adverse effects go far beyond the visual effects on buildings. In my opinion the adverse effects on the environment of the foothills would be unacceptable.”* (Anstey, para 111 [sic] on page 57). Utilising landscaping as a mitigation measure is not “fanciful”, rather landscape is an appropriate mitigation measure that can reduce a negative visual impact.

- 4.32 Furthermore landscape planting is common around many of the properties near the potentially most affected residences, which may be a response to the windy conditions. However, Mr Anstey then leaps from an impact on a viewer at a residential location, where mitigation may be appropriate, to an implied adverse effect on the foothills. I assume he means that this adverse effect would occur to people looking at the foothills from public roads etc. Again this assertion is not clarified, and it is not supported in his evidence however he intends it to be received.
- 4.33 For these reasons I believe that my assessment was as comprehensive as possible, and consistently sought to provide a true and conservative indication of the likely visual impacts from residential properties. Accordingly, I remain comfortable with my conclusions.

Tracking and earthworks

- 4.34 The potential impacts of tracking, earthworks and supporting infrastructure are addressed, very briefly, by two of the expert witnesses for TAG, FOTR and PNCC.
- 4.35 Mr Anstey claims that the “*roads through the Turitea Reserve would significantly impact on the existing natural character.*” (Anstey, para 116). Again, however, he provides no supporting analysis for this assertion. In fact, his views on these activities occupy barely two paragraphs.
- 4.36 In fact, as discussed earlier, the installation of “electrical generation activities” is contemplated within this Reserve in the area to which the Reserve Management Plan applies, and any impact on landscape values can be mitigated. In reality the visual impact will be very low except for viewers within the Reserve. From locations below these ridges the area of native vegetation and the proposed roads will both remain for the most part unseen.
- 4.37 Mr Anstey also claims that the visual effects from other wind farm components would “*overwhelm the character of the Reserve and a ‘built and industrial character’ would become dominant.*” (Anstey, para 116).
- 4.38 I strongly disagree with this statement. It is not my experience that wind farms create an ‘industrial character’ which is typified by a high proportion of built form and an even greater proportion of hard surface across a site. Wind farms are completely different to any *industrial* development. As I have noted, I agree that the character will change and that there will be a wind farm overlay on the existing landscape, whether that landscape comprises grazing land or remnant vegetation.
- 4.39 Ms Lucas also raises concerns about what she describes as “*the extensive cut and fill earthworks proposed along ridges and slopes*”, which she considers “*would disrupt the*

continuity of natural land surfaces.” (Lucas, para 107). In support of her opinion, Ms Lucas attaches several photographs (attachment 29 to her evidence), which appear to have been taken from a helicopter above the West Wind (Makara) site *during* wind farm construction. In my view, Ms Lucas’s approach is flawed for several reasons. First, the viewpoint she relies upon is plainly not at all realistic or relevant. Secondly, the photographs she uses illustrate a cut and fill method which is not proposed to be used at Turitea, as outlined in the evidence of Mr James. From my perspective, that technique is far more sensitive to any given landscape, and will ‘heal’ faster than the approach adopted at West Wind. Thirdly, I do not consider Ms Lucas’s photographs to be at all representative, given they show tracking works very soon after completion, if not still in progress. That there may be a temporary visual impact whilst such works are “fresh” cannot be, and is not disputed. However, it is also a fact that the earthworks in this case have been carefully designed to minimise impacts at all stages, and will with time ‘heal’ so that those impacts are minimal.

4.40 Accordingly, I do not consider there to be anything of substance in the criticism or conclusions of either Mr Anstey or Ms Lucas on this issue, and maintain my own opinion that the prospect of meaningful adverse effects is extremely low.

5. CUMULATIVE EFFECTS

- 5.1 The evidence for TAG, FOTR and PNCC criticises my assessment of the change brought about by both simultaneous and sequential views – cumulative effects. As I noted in my SoE:
- (a) Simultaneous views are views in which the presence of more than one wind farm is possible.
 - (b) Sequential views attempt to assess the change to people’s cognitive landscape as they move around their properties or travel along the local road network and have views of a number of wind farms.
- 5.2 Turning first to simultaneous views, Mr Anstey comments that there are many locations from which these would be possible (Anstey, para 104) based on the viewpoints selected within the LS&VA and the SoE. These viewpoints were carefully selected to show the greatest visual impact, and therefore whilst some conclusions can be drawn, it should be clear that these are not representative of all viewpoints, or even the majority of locations as one moves around the local area.
- 5.3 From locations in the public domain, especially (as Mr Anstey acknowledges) from “*a number of public spaces ... on the city’s south eastern edge.*” (Anstey, para 104) there are views to the existing wind farms from which Turitea will also be visible. However, to assume that the presence of the Turitea Wind Farm will make some dramatic change, or that its mere presence is beyond the limits of acceptability, is not supported by any reasoning in Mr Anstey’s evidence. I also do not agree with it, for the reasons I now explain.
- 5.4 Once again, the underlying assumption in Mr Anstey’s evidence seems to be that the Ranges will be ‘destroyed’ by the presence of another wind farm. From both a logical and visual perspective this is, in my opinion, incorrect. There will be a change, but from locations around the edge of Palmerston North, the additional turbines will alter, but not ‘destroy’, the landscape. Neither, in my assessment will they bring about change that gives rise to unacceptable visual and landscape effects in a cumulative sense.
- 5.5 That is because from most locations the wind turbines are some distance away, well beyond the 3.5 km zone, which is the distance at which the greatest visual impact is possible. These locations, on the city’s south eastern edge, are usually 6 km or more from the nearest wind turbine. In addition, many of these are in locations used for sport or are other large scale recreational areas and these would have a quite different focus than say from a walking track. Furthermore, (and as I have noted on a number of occasions) the research evidence

consistently suggests that the majority of viewers are either neutral to or supportive of the presence of wind turbines.

- 5.6 Turning to sequential views, Mr Anstey acknowledges that “*topography and vegetation do make views transient*” (Anstey, para 108). I consider that this is important when evaluating sequential views. Mr Anstey seems to have assumed that as one moves along Aokautere Drive / Fitzherbert East Road /Highway 57 on the west of the Ranges or Highway 2 on the east, there are few points from which views to a wind farm now become available, where previously no wind farms were evident. This was clearly shown in the LS&VA in Section Figure 10.18, which is replicated below as **Figure 6**.

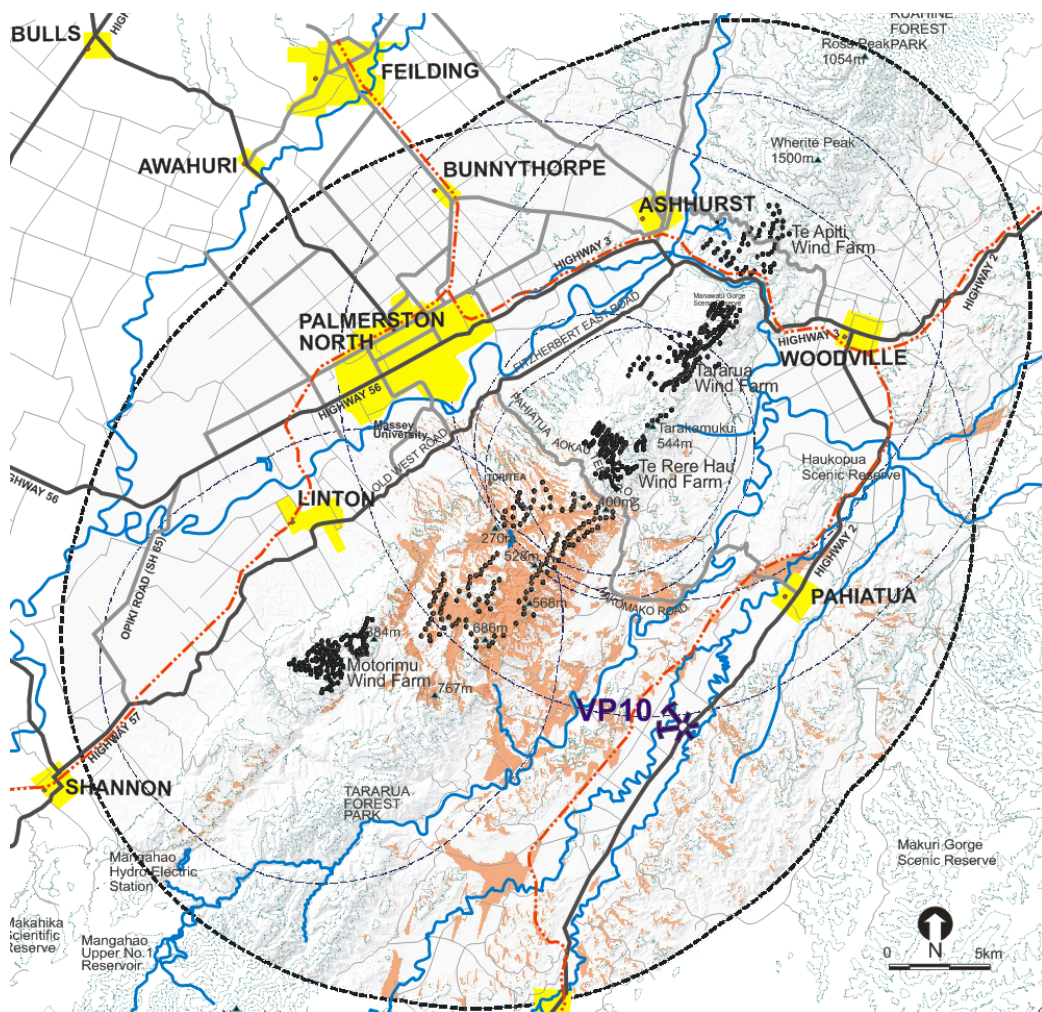


Figure 6: The change in seen area for the existing and proposed wind farms (LS&VA, Figure 10.18.)

- 5.7 Figure 6 shows those areas from which it is possible to see the proposed wind turbines at Turitea, and from which at present, one cannot see any other wind farm. This analysis is based solely on topography, so in some instances it may not be possible to see *any* wind farms, or the proposed Turitea Wind Farm may be obscured by vegetation.
- 5.8 However one issue that this Figure clearly demonstrates is that Ms Lucas is correct when she states that “*the identity of the Manawatu and Palmerston North is already associated with wind turbines*”. (Lucas, Para 145).
- 5.9 I agree with Ms Lucas. However, whilst the Turitea Wind Farm will increase the numbers of wind turbines on the Ranges, it is debateable whether this association will “*considerably increase*” (Lucas, para 145), as Ms Lucas claims.
- 5.10 Even if the ‘association’ were to ‘increase’, it must also be stressed that this association is not necessarily negative. In fact the community perception studies both in New Zealand and overseas continually show that a large majority of people have a positive response to wind farms, as discussed in the LS&VA, my SoE and repeated earlier in this evidence. Further, it must be recognised that sequential viewpoints occur now in a landscape already strongly associated with wind turbines.
- 5.11 Mr Bray in his evidence states that “*I therefore generally agree with the approach used by Mr Wyatt, but I disagree with his conclusions. Ultimately I did not address cumulative effects as a separate effect to be considered above all else, but rather I felt it was critical to the whole assessment of the receiving landscape and as such it forms a large basis of Part 1 of my evidence.*” (Bray, para 236)
- 5.12 Turning to Part 1 of this evidence I find that this cumulative assessment, if such has been undertaken, was on the basis of the designated groups – which I have critiqued as an evaluative tool without merit. For example, when assessing Group A turbines Mr Bray concludes with: “*this group of turbines also appears somewhat removed from the bulk of the wind farm, and as such would compromise a disproportionately large part of the overall landscape.*” (Bray, para 168). That statement itself is full of generalities and misconceptions.
- 5.13 In fact, the Group A turbines are not “somewhat removed” from the Group B turbines. The inter-turbine distance between T53 to T50 (Group A) is approximately 380 m, whilst the distance between T50 to T74 (Group A to Group B) is approximately 490 m. Inter-turbine distances elsewhere in Group A and B are around 500m, so in fact Group A is not “somewhat removed”, nor can a case be made for it compromising a disproportionately large part of the overall landscape. There are 12 turbines in the arbitrary group referred to as Group A, only 6 in Group B and 35 wind turbines in Group D. The inter turbine distance for some of the wind

turbines in Group D is greater than the distance between Groups A and B. Again, this only highlights the inherent inaccuracy of assessing turbines as if they were in discrete groups, and the conclusions that are then reached regarding cumulative effects are in my view equally as flawed.

- 5.14 Even so, Mr Baker's evidence also utilises this method of assessment when, for example, he states "*in terms of landscape effects, I consider that the groups of turbines known as Browns Flat West, Love Property, Bryant Hill West, Bryant Hill East and the Upper Pahiatua all create significant adverse effects on properties particularly within a 3km radius of the nearest turbines and create unacceptable cumulative effects associated with the cascading and layering of turbines across elevations.*" (Baker, para 91). Similar broad-based assessments continue in the following paragraphs.
- 5.15 This statement is unsupported with any analysis. What are the "significant adverse effects"? They are not described. The assessment also simplistically assumes that *all* properties within 3km are affected. Lastly, this assessment confuses the recognised meaning of "*cumulative effects*" with analysis of the potential effects of Turitea by itself.
- 5.16 In conclusion, I do not believe that the evidence of Messrs Bray and Anstey, or of Ms Lucas, demonstrates that sequential or simultaneous views are of particular significance or concern. There will undoubtedly be some locations that will have views of both Turitea and other wind farms, however, I do not believe that this alteration to the view is as great as has been suggested, nor in fact should it be automatically assessed as 'adverse'.

6. MITIGATION AND PLANTING

- 6.1 Concerns have also been raised in the evidence for TAG, FOTR and PNCC regarding my discussion of potential mitigation measures.
- 6.2 For example, Mr Baker states that *“In a working landscape it is not, in my opinion, sufficient to mitigate views from houses. The appeal of rural living is in the escape from the containment and constraints of urban living. In rural environments trees are used in functional ways, to provide shelter and create habitat. There are cases where planting could mitigate views without unduly compromising the character and quality of a property.”* (Baker, para 95).
- 6.3 I consider that these points are very broad, and presented with no support. Mr Baker's contention that it is not sufficient *“to mitigate views from houses”* is in some respects correct. However, it must be recognised that the house and immediate environs are the central focus for a rural property, and as a general proposition mitigation measures are routinely intended to treat the highest use area.
- 6.4 Secondly, Mr Baker's statement that *“in rural environments trees are used in functional ways, to provide shelter and to create habitat”* may be a valid observation with respect to working farm areas, but is incorrect, and far too simplistic, so far as he intends it to reflect the approach at and around rural dwellings. Many rural houses have gardens with a high degree of design focused on an aesthetic outcome. Some of these use landscaping to frame views, and others use landscaping to surround the dwelling – often, in fact, to shield it and adjacent outdoor areas from prevailing winds.
- 6.5 In addition, from my experience, landscaping is often an appropriate response in the circumstances here under consideration. In many gardens within the Ranges and on the foothills, planting has also been used as a functional response to the windy conditions. Many houses have extensive boundary planting. This is recognised by Mr Anstey, where he states *“trees and fences define ordered patterns of settlement and enclosure, with older houses buried in trees [my underlining] and newer ones standing naked on low hills and ridges.”* (Anstey, para 89).
- 6.6 In terms of how long it would take for mitigation planting to be effective, Ms Gabites states that *“nurseries provide trees from 3 metres height after three years”* (Gabites, para 121). This is on the low side of the range I quoted of between 1-2 metres growth per year, which is based on growth rates of similar species in Australia on windy sites. I also agree that it will take some years for even fast growing species to provide appropriate screening, and longer for the planting to create an effective wind break. However, even accepting a growth rate of one

metre per year, which is consistent with Ms Gabites' evidence, within five years a substantial screen could be established on a residential boundary.

- 6.7 In conclusion, I believe that landscape mitigation is an effective tool for residential properties where occupants have a desire to reduce the visual impact of or change their view. Strategies can include any level of screening from the dense cypress hedgerows, to open canopied deciduous trees whose branching patterns can filter views. Planting can also be strategically located to remove a view of the nearest wind turbines whilst maintaining views elsewhere across the countryside.

7. CONCLUSIONS

7.1 In conclusion, I reiterate the following statement from my SoE:

“In summary, it must be acknowledged that by its very nature and scale, the proposed wind farm and its component elements will be a new and visually prominent addition to the landscape of the Tararua Ranges. However, it is important to remember that even high levels of visibility do not necessarily equate with significant adverse effects. Landscapes change over time in numerous ways and for many different reasons. It is therefore important to focus on the nature and scale of change that will occur and the landscape’s ability to absorb it, as well as community perception of, and tolerance for, such change.” (SoE, para 16.1)

7.2 Having reviewed my SoE with a critical eye, I do not believe that any new information has come to light or assessment techniques have been identified which would cause me to alter either my approach to assessment or the conclusions I have reached.

7.3 The significant impacts were in each case assessed as being “*on residential properties in close proximity to proposed wind turbines*” (SoE, para 16.2 (g)). This accords with the findings by other witnesses, although in the absence of any record of their methodologies it appears those conclusions were reached on the basis of assumptions and ‘general’ assessment, and failed to examine affected properties individually.

7.4 In the assessment I have completed on a number of wind farms I am only too aware that even adjoining properties can have completely different impacts. I have taken this into account at all times, and attempted to be as conservative as possible in assigning a ‘value’ to potential effects, and in postulating mitigation treatments.

7.5 I would also like to stress that even this assessment was made on the basis that every resident whose property was visited, and for which an assessment was completed, was undertaken on the basis that the particular resident opposes the wind farm (whether or not they in fact do) and this position will remain unchanged after construction.

7.6 In reality this is – consistent with my approach to assessment of all effects – conservative, because acceptance, even appreciation of a wind farm, has been consistently found to increase *after* construction. Whilst limited (ie studies of perception change after construction) these results are supported by all methodologically sound perception studies, whether undertaken in New Zealand, Australia, the UK or the US. All these studies have shown a high degree of acceptance of wind turbines in the landscape.

7.7 In closing, it is my view that, save for Mr Bray, the expert evidence presented for TAG, FOTR and PNCC is disappointing in its failure to provide any explanation of the approach used for the witnesses' assessment, let alone the methodology employed. I consider that my own analysis and conclusions are robust and appropriate, and I am confident that I have fairly and conservatively represented the potential for adverse effects on surrounding residents, road users, and the people of the Palmerston North area generally.

Allan Wyatt

5 June 2009