

Before a Board of Inquiry
MacKays to Peka Peka Expressway Proposal

under: the Resource Management Act 1991

in the matter of: Notice of requirement for designation and resource consent applications by the NZ Transport Agency for the MacKays to Peka Peka Expressway Proposal

applicant: **NZ Transport Agency**
Requiring Authority

Statement of rebuttal evidence of **Stephen Fuller** (Ecological Mitigation, Environmental Management and Monitoring) for the NZ Transport Agency

Dated: 26 October 2012

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	2
EVIDENCE OF SUBMITTERS	4
Avoidance of effects	4
Inland extent of the coastal environment	5
Policy 22 of the proposed RPS.....	7
Biodiversity Offsetting	12
BBOP Principles	16
ANNEXURE A: LENZ THREAT OVERLAY FOR THE KAPITI COAST	21

STATEMENT OF REBUTTAL EVIDENCE OF STEPHEN FULLER FOR THE NZ TRANSPORT AGENCY

- 1 My full name is Stephen Andrew Fuller.
- 2 I have the qualifications and experience set out at paragraphs 2 to 7 of my evidence in chief, dated 5 September 2012 (*EIC*).
- 3 I repeat the confirmation given in my EIC that I have read, and agree to comply with, the Code of Conduct for Expert Witnesses (Consolidated Practice Note 2011).
- 4 In this statement of rebuttal evidence, I respond to the evidence of:
 - 4.1 Mr Tim Porteous, on behalf of Greater Wellington Regional Council (*GWRC*), (submitter 684);
 - 4.2 Dr Ian Boothroyd, on behalf of *GWRC*;
 - 4.3 Ms Shona Myers, on behalf of Kāpiti Coast District Council (*KCDC*), (submitter 682);
 - 4.4 Mr Braddyn (Brad) Coombs, on behalf of *KCDC*; and
 - 4.5 Ms Melanie Dixon, on behalf of Raumati South Residents Association (*RSRA*), (submitter 707).
- 5 The fact that this rebuttal statement does not respond to every matter raised in the evidence of submitter witnesses within my area of expertise should not be taken as acceptance of the matters raised. Given a number of the matters raised above are also addressed by the other specialist ecologists and technical specialists, I have relied on my earlier technical reports,¹ the technical reports of other specialists and their EIC, and this rebuttal statement to set out my opinion on what I consider to be the outstanding ecological matters for this hearing.
- 6 Consistent with my EIC, I have referred to the MacKays to Peka Peka Expressway Project as "the Project" in this rebuttal evidence.

EXECUTIVE SUMMARY

- 7 With the exception of one person, none of the submitters on ecological issues has acknowledged the significant efforts that have gone into avoiding and minimising adverse ecological effects. These efforts have resulted in a Project that avoids the most ecologically valuable sites, thus reducing the scale of effects that must be

¹ Technical Reports 26 (Ecological Impact Assessment), 27 (Terrestrial Vegetation), 29 (Avifauna), 30 (Freshwater) and the draft Ecological Management Plan.

mitigated, and affecting only the more modified sites where mitigation will be more readily achieved.

- 8 The evidence of Mr Coombs does not change my view as to whether the Project alignment lies within the coastal environment.
- 9 Much is made of the ecological team's assessment of significance and application of Policy 22 of the proposed Regional Policy Statement (*proposed RPS*). I believe that assessing the ecological significance of indigenous ecosystems and habitats in accordance with the most recent version of Policy 22, results in the same outcome as that set out in the ecological technical reports² and the EIC prepared by the Project's ecological witnesses.³ This is because our approach to our ecological assessment was precautionary and all sites of indigenous vegetation and habitat were listed and described as part of the assessment. I also note that even though we carried out additional description and valuation of these sites not required by Policy 22, this did not influence our determination of the requirements for mitigation of effects.
- 10 I respond to a range of issues raised by submitters in regard to biodiversity offsetting and the mitigation hierarchy. I believe that in recent years, attempts to overlay the Business and Biodiversity Offset Programme (*BBOP*) mitigation hierarchy onto the RMA process have been overly complicated and resulted in considerable confusion over what is mitigation and what is offsetting, if in fact they are different things at all. I present my views on this which I believe are consistent with the new BBOP Standard on Biodiversity Offsets,⁴ a document quoted as "best practice" by several submitters. For the avoidance of doubt, I then consider the outcomes of our assessment against this new Standard.
- 11 Putting aside differences of opinion and interpretation, it is my view that the ecological team's assessment has been carried out according to accepted international practice, and that if the principles of the BBOP Standard are applied to the results of our assessment, the principles are all met.
- 12 There is general agreement that adaptive management is the appropriate approach to managing uncertainty and risk. Additional recommendations are made by several submitters regarding the details of the adaptive management process and associated consent conditions which I discuss in detail below.

² Technical Reports 26-31.

³ See the EIC of Mr Park, Dr Keesing, Dr Bull, Dr De Luca and myself.

⁴ Business and Biodiversity Offsets Programme (BBOP) 2012 - Standard on Biodiversity Offsets. This is attached to Mr Porteous evidence, Appendix IV.

EVIDENCE OF SUBMITTERS

- 13 There are a number of issues raised that are common between witnesses and I will address these under topic subheadings. I then follow with responses to individual submitters where the issues raised are unique to them.

Avoidance of effects

- 14 I am concerned generally, that in the criticisms of the effects assessments and mitigation calculations undertaken by the Project's ecology team, little acknowledgement has been given to the significant efforts that have gone into avoiding and minimising the effects of the Project on significant habitats.
- 15 In the ecological and planning evidence of KCDC and GWRC, the efforts to avoid adverse ecological effects are not acknowledged by Mr Porteous, Mr Percy, Mr Perry, Dr Death, Ms Thompson or Dr Boothroyd.
- 16 For example, Dr Boothroyd writes *"if a mitigation hierarchy' is accepted then it would be beneficial to the reader if the avoidance, remediation, mitigation and compensation components of the 'mitigation package' are clearly identified"*. However, he does not acknowledge or refer to the sections in the Ecological Impact Assessment⁵ summarised in my evidence in chief⁶ that describe the extent that avoidance has been achieved.
- 17 Similarly, despite Ms Thompson's discussion on the difference between the designated Western Link Road and this Project [paragraphs 5.1 – 5.6], she does not mention the substantial reduction of direct ecological impacts that have been achieved by this Project.
- 18 However, I acknowledge that Ms Myers does recognise and strongly support the approach taken by the Project team to avoid destruction of these wetlands and habitats (paragraph 5.2).
- 19 I wish to reiterate that:
- 19.1 A significant element of the ecological involvement in this Project was the identification, early in the scoping stages, of ecological constraints and opportunities. These efforts contributed to a proposed alignment which avoids, or largely avoids, many of the potential adverse ecological effects of the Western Link Road Designation.
- 19.2 Although not all adverse ecological effects could be avoided, the direct adverse effects are now restricted to habitats of

⁵ Technical Report 26, Section 7 Project Shaping.

⁶ See paragraphs 56–59 of my EIC, and paragraphs 76-79 of Mr Park's EIC.

lower ecological value where losses will be less ecologically significant and more readily mitigated.

- 19.3 Where effects could not be avoided to sites of even low ecological value, every effort has been made to minimise effects. The proposed conditions identify these sites and require works to be managed to minimise adverse ecological effects on them.⁷
- 19.4 For those areas of ecological value outside of the designation where there is uncertainty regarding indirect effects (e.g. on wetland hydrology), an adaptive management framework is proposed to respond to any changes caused by the Project in such a way that, where possible, all adverse effects are remedied before mitigation is required.
- 19.5 Overall, I am confident that the ecological assessments have accurately identified the effects that require mitigation and monitoring, appropriate forms of mitigation have been identified and the calculations of required mitigation are appropriate.
- 19.6 Where uncertainty remains, as it always will for a project of this scale, I believe all uncertainties have been identified, the risks accurately described, appropriate measures identified to monitor and respond if effects occur, and conditions developed to provide certainty over this process.

Inland extent of the coastal environment

- 20 Mr Coombs' evidence focuses exclusively on the inland extent of the coastal environment and the investigations that he and his colleagues completed for the Kapiti Coast District Coastal Environment Study.⁸
- 21 Mr Coombs maintains that the approach that Mr Evans and I adopted to define the inland extent of the coastal environment is too narrow. He also maintains that our approach focuses "overly narrowly on factor (c) in Policy 1(2) of the NZCPS".⁹
- 22 I disagree. My evidence in chief considered equally, the three key policies that relate to ecology, namely (2)(c), (e) and (h). To reiterate:

⁷ My EIC, proposed condition G.41.

⁸ Mr Coombs' interpretation is supported by Ms Julia Williams for KCDC (paragraphs 5.4 to 5.7).

⁹ Mr Coombs' evidence, paragraph 3.3.

(c) Areas where coastal processes, influences or qualities are significant, including coastal lakes, lagoons, tidal estuaries, saltmarshes, coastal wetlands, and the margins of these

- 23 Coastal 'processes' refer to matters such as active dunelands, coastal erosion and accumulation, tidal flows, salt spray, and so on. This influence diminishes as you move inland until a point is reached where coastal influences cease to dominate and are overridden by other environmental factors.
- 24 While there will still be a coastal influence at the Project footprint, coastal processes are in my opinion no longer dominant and most are absent. Of the five environments listed by this criterion, none occur within the proposed designation footprint.

(e) Coastal vegetation and the habitat of indigenous coastal species including migratory birds

- 25 To reiterate from my EIC, within the Project:
- 25.1 None of the wetlands are dominated by plant species which are obligate to saline or brackish water, such as estuaries or coastal dune slacks.
- 25.2 None of the streams are tidal or contain saltmarsh vegetation.
- 25.3 None of the fish communities observed were dominated by coastal species (e.g. flounder, mullet, and kahawai). Few of the macro-invertebrates found in these streams would survive in saline or brackish water.
- 25.4 The indigenous terrestrial vegetation is dominating by seral forests of mahoe or kanuka and the forests that they will eventually develop into will, in my opinion, be more correctly described as lowland.
- 25.5 The avifauna is predominantly pastoral with a variety of waterfowl and cryptic waders in and around the freshwater wetlands. None of the coastal species seen traversing the alignment (gulls, shags) are reliant on habitat within the alignment.

(h) Inter-related coastal marine and terrestrial systems, including the intertidal zone

- 26 The Project lies between 0.9 and 2.8 km inland of the intertidal zone and in my view none of the terrestrial systems within it are interrelated with the coastal marine area. This criterion is therefore not relevant to the Project.
- 27 I note that this issue is also considered in the rebuttal statements of **Mr Boyden Evans** and **Mr Robert Schofield**.

Policy 22 of the proposed RPS

Overview

- 28 A number of submitters have criticised the ecological team's application of the significance criteria in Policy 22 of the proposed RPS.¹⁰ In particular, there is a suggestion that Policy 22 was not applied consistently or properly, and that instead of considering other significance assessment criteria (i.e. additional to Policy 22) we should only have applied Policy 22. **Mr Schofield, Mr Matiu Park and Dr Vaughan Keesing** discuss this in their rebuttal as it relates to their specialist areas. However, I add here a few more generic comments on this Policy and its relevance to the ecology assessment.
- 29 I would like to start by making an observation which I consider to be fundamental. That is, while a site may be considered to have 'significant indigenous biodiversity value' under Policy 22, this does not mean that the site will also be of high ecological value. For example, if a dabchick (*Threatened; Nationally Vulnerable*)¹¹ was recorded as present at a small pond then criteria (b) of Policy 22 determines that this pond is habitat of significant biodiversity value. However, depending on its size, water quality, extent of indigenous vegetation, diversity of species, isolation, and so on, the pond may have quite low ecological value relative to other sites.
- 30 This is relevant because the role of an ecologist in carrying out an assessment of effects is not to simply assess whether vegetation and habitats that are potentially affected have "significant biodiversity value". The involvement of the ecological team in the Project has included project scoping, constraints mapping, identification of fatal flaws, advising on value and risk, informing the Project's development and design with consideration of avoidance of adverse ecological effects, assessing the magnitude and significance of effects on ecological systems, determining the duration of effects and likelihood of recovery, considering appropriate mitigation and advising on conditions. These activities require much more than a statement of significance, relying on an complete understanding of the range of ecological values for each site. This is usual practice for an ecologist's involvement in a project.

¹⁰ Dr Boothroyd's evidence, (paragraphs 6.2-6.3 and 6.9), Mr Porteous' evidence, (paragraphs 11-33), Ms Myers evidence, (paragraphs 5.10-5.11), and Mr Perrie's evidence, (paragraphs 14-15).

¹¹ The proposed RPS includes a definition of 'Threatened species' as follows: *All species determined to be classified by the New Zealand Threat Classification System 2008 (or subsequent revisions) as Nationally Critical, Nationally Vulnerable, Nationally Endangered in the 'Threatened' category and all species determined to be classified as Declining, Relict, and Recovering categories of the 'At Risk' category.*

- 31 Returning to the criticisms of the ecology team's assessment of significance, the following matters were raised:
- 31.1 We considered other significance criteria, not just Policy 22;¹²
- 31.2 We scored all significance criteria, and ranked sites, rather than simply accepted that under Policy 22 a site is either significant or it is not¹³ and Policy 22 takes a 'one or more' approach, i.e. a site only needs to meet one criteria to be judged significant;¹⁴ and
- 31.3 By using criteria modified from the pRPS criteria, and using methods that assess sites across all criteria, the applicant fails to identify all areas of significant ecological value.¹⁵
- 32 With regard to the first criticism. As is outlined in the rebuttal of Mr Schofield, at the time of carrying out our assessment, Policy 22 was under appeal and there was every chance that the final version would be significantly different than the notified version. While the ecology team considered the earlier wording of Policy 22 in our assessment (appended to Mr Park's EIC), as Policy 22 was under appeal we used other existing significance criteria to inform our analysis. This included criteria used by KDCDC for their 2003 Significant Natural Area surveys¹⁶ and criteria established by the recent Environment Court in the *Shearer Swamp* decision.¹⁷ I believe this approach was entirely appropriate.
- 33 Having seen the near final version of Policy 22 outlined below,¹⁸ I would argue that the revision to criterion (a) constitutes a significant change that we could not have reasonably anticipated. I believe the addition of '*or current natural diversity*' substantially alters the interpretation of this Policy from the notified version. This criteria now reads:
- (a) *Representativeness: ~~high representativeness values are given to particular the ecosystems and or habitats that are typical and characteristic examples of the full range of the original or current natural diversity of ecosystem and habitat types were once typical and commonplace in a district or in the region, and:~~*
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- ¹² Dr Boothroyd's evidence (paragraphs 6.2 and 6.9); Mr Porteous' evidence (paragraphs 18-25).
- ¹³ Mr Porteous's evidence (paragraph 24).
- ¹⁴ Dr Boothroyd's evidence (paragraph 6.3); Mr Porteous' evidence (paragraph 16).
- ¹⁵ Mr Porteous' evidence (paragraph 25).
- ¹⁶ Wildland Consultants Ltd. 2003. Kāpiti Coast District Council 2002-2003 Ecological Sites Survey. Prepared for Kāpiti Coast District Council, Report 662. 57 pp.
- ¹⁷ *Friends of Shearer Swamp Incorporated v Solid Energy New Zealand Limited* [2010] NZEnvC 345.
- ¹⁸ As described in Mr Porteous' evidence (Appendix III).

- (i) are no longer commonplace (less than about 30% remaining); or
- (ii) are poorly represented in existing protected areas (less than about 20% legally protected).

34 In his criticism of our consideration of the *Shearer Swamp* decision, Mr Porteous states:

GW discussed with appellants to the pRPS the status and applicability of the Shearer Swamp decision. As the result of those discussions, all parties agreed that transferring the conclusions drawn in that decision to the Wellington region context is inappropriate. (para 22)

35 I would point out that the NZTA was not a party to these appeals and so was not involved in that discussion. Further, I understand that the mediation that led to these decisions occurred after this Project's application had been lodged.

36 The second criticism is that we assessed and scored all significance criteria, and ranked sites, even though Policy 22 does not require or specifically provide for this. This debate comes back to my discussion earlier with regard to the role of an ecologist in a project of this type, and the need to describe and understand all the ecological values of a site to make informed decisions as part of an assessment of effects. I fundamentally disagree that this was a weakness of our assessment, and would argue instead that it strengthened our assessment of ecological value and risk.

37 The third criticism is that because of our use of other assessment criteria and our scoring and ranking of sites, we have failed to identify all areas of significant ecological value. I believe that this is incorrect and this is discussed in detail by **Mr Park**.

Application of Policy 22 to this Project

38 As noted above, if an indigenous ecosystem or habitat meets one of the criteria in Policy 22, it will be considered to be "significant". The criteria are very broad and I suggest that Policy 22 will capture almost all indigenous vegetation and habitats within the Wellington Region that are not already protected.

39 Most relevant for this Project, criteria (a) uses the Land Environments of New Zealand (LENZ) threat overlay¹⁹ to determine whether an ecosystem or habitat is "no longer commonplace" or is "poorly represented as follows:

- (a) *Representativeness: the ecosystems or habitats that are typical and characteristic examples of the full range of the original or current natural diversity of ecosystem and habitat types in a district or in the region, and:*

¹⁹ Land Environments of New Zealand (LENZ) threat classes for indigenous vegetation and habitats (Ministry for the Environment and Landcare).

- (i) are no longer commonplace (less than about 30% remaining); or
- (ii) are poorly represented in existing protected areas (less than about 20% legally protected).

40 This LENZ overlay is shown on the map in **Annexure A** attached to my evidence. This map is taken from Technical Report 26 (Figure 11) and shows those land environments within the study area which fall beneath the LENZ threat overlay. It also shows that we considered this overlay in our assessment.

41 **Annexure A** shows that all of the Kāpiti Coast sand country, from the coastal dunes to the toe of the Tararua foothills, is captured by the “no longer commonplace” and “poorly represented” criteria.

42 The other component of this criteria is “habitats that are typical and characteristic examples of the full range of the original **or current** natural diversity of ecosystem and habitat types” (my emphasis). My interpretation of this criteria is that it will capture all regenerating shrublands and scrub in the Kāpiti District, irrespective of whether they bear any resemblance to the vegetation types that would once naturally have occurred at the site such as kahikatea swamp forest.

43 Policy 22 only requires that a habitat or ecosystem be indigenous to fall within this criteria. As discussed by Mr Park and Mr Schofield, there is limited guidance as to what constitutes an “indigenous ecosystem or habitat” in the RPS, but logically it means that any habitat that is dominated by native species needs to be assessed, any habitat that is dominated by exotic species does not.²⁰

44 As the M2PP Project alignment lies entirely on Kāpiti sand country, my interpretation of the Policy is that all indigenous vegetation and habitats, shrublands, scrub, forest, wetlands and streams, that lie within the proposed designation are considered by that Policy 22(a)(i) to have significant indigenous biodiversity value.

45 I contend that this was also the approach taken by the assessment of ecological effects. We have identified all areas of indigenous vegetation and habitat within the Project designation and required mitigation for all effects to that vegetation and habitats. I therefore believe our assessment was entirely consistent with this policy.

Relevance of Policy 22 to an Assessment of Effects

46 Because the determination of ecological significance under Policy 22 is a blanket determination without the opportunity for any finer analysis, this Policy has no regard to the actual physical state, or condition of an indigenous ecosystem or habitat, or the relative

²⁰ The definition of ‘indigenous’ in the proposed RPS is ‘originating naturally in a region or area’. The definition of ‘ecosystem’ in the proposed RPS is similarly broad, being ‘Any system of interacting terrestrial and/or aquatic organisms within their natural and physical environment’.

abundance or distribution of species within it - all important factors that must be considered in an assessment of effects.

- 47 Nor does this Policy provide guidance to the quantum of mitigation that may be required for loss, or inform decisions where different options may impact different sites. For example, if two different alignment options impact on two separate wetlands, the Project ecologist needs to consider:
- 47.1 Which option will result in the greatest ecological impact and which will result in the least?
- 47.2 Which sites are the most robust, which the most sensitive to change?
- 47.3 Which sites are more likely to recover?
- 47.4 At which of these two sites will adverse effects be more readily mitigated?
- 47.5 Which sites are appropriate to focus mitigation activities on, and, given the condition of each site, what activities would provide the greatest benefit?
- 48 To do this work we need to properly describe the ecological health and values of each site and be able to compare sites. These descriptions require a more fine grained analysis than that required by Policy 22.
- 49 This is the analysis that our ranking of sites, described earlier (paragraphs 29 and 30), was used for. The ecology team's ranking of sites led to development of a constraints map which guided early stages of design of the Project alignment. This ensured a focus on avoiding the areas of highest value wherever possible. It was also used for identification of potential ecological mitigation sites. This is accepted practice for ecological effects assessments and is a task independent of ecological significance assessment.
- 50 For these reasons, I disagree with Mr Porteous' criticism of our site ranking (paragraph 24).
- 51 Further, I wish to confirm to the Board that the division of ecological sites into high, medium and low value did not eliminate wetlands or terrestrial habitats from consideration. All indigenous terrestrial vegetation, irrespective of condition or relative value score, was identified by our study and mitigation required for loss, as discussed by **Mr Park**.²¹ Similarly, all waterways, irrespective of condition or

²¹ Refer Mr Park rebuttal evidence.

relative value score, were identified and mitigation required for loss as discussed by **Dr Keesing**.²²

52 In summary:

52.1 I believe we (the ecological team) have carried out our assessment according to accepted practice.

52.2 We have carried out a significance assessment at the correct stage of our work and for the correct purpose.

52.3 We have further described and assessed the ecological condition of all valued sites as necessary to properly conduct an assessment of effects.

52.4 Ultimately whether we followed Policy 22 to the letter is in my view irrelevant, as I believe all sites that would be captured under the current wording of Policy 22 have been captured by our assessment anyway.

52.5 Mr Porteous appears to be confusing Policy with application. I refer also to the rebuttal evidence of **Mr Schofield**.

Biodiversity Offsetting

53 Mr Porteous²³ and Ms Myers²⁴ criticise the fact that the ecology team did not assess the Project using the Business and Biodiversity Offset Programme (BBOP)²⁵ guidelines and has not applied a biodiversity offsetting model to the calculation of necessary mitigation for the Project. As a result, they argue that the levels of mitigation are inadequate. I disagree with their criticisms, as explained below.

54 By way of preface, in the last few years, the words 'Biodiversity Offsetting' have entered the RMA language, although, in my opinion, not necessarily in a considered way. They have originated from the BBOP which the Department of Conservation (DOC) is championing through the DOC Biodiversity Offsets Programme. The purpose and principles of BBOP have in part been accommodated in the proposed National Policy Statement on Indigenous Biodiversity (*the Proposed NPS*), including the principle of "no net loss".

55 However, the relationship between offsetting and the RMA's "avoid, remedy and mitigate" approach has become very confused, and tools for the application of biodiversity offsetting in New Zealand are yet to be developed.

²² Refer Dr Keesing rebuttal evidence.

²³ Paragraphs 34 to 42.

²⁴ Paragraphs 6.7 to 6.17.

²⁵ Copy attached as Appendix IX to Mr Porteous' evidence.

- 56 Some agencies have interpreted 'offsetting' to be an aspect of 'mitigation' or a specific mitigation treatment. This was the approach accepted by the Board of Inquiry for the Transmission Gully Plan Change and was incorporated into the Wellington Regional Freshwater Plan.²⁶ Others agencies consider offsetting to follow mitigation in an 'avoid, remedy, mitigate, offset' hierarchy. This approach was adopted in the Proposed NPS (Policy 5) and was favoured by the One Plan Decision.²⁷
- 57 In my opinion, placing offsetting below mitigation is inconsistent with BBOP's own principles,²⁸ the first of which states:

"Principle 1 - Adherence to the mitigation hierarchy:

A biodiversity offset is a commitment to compensate for significant residual adverse impacts on biodiversity identified after appropriate avoidance, minimisation and on-site rehabilitation measures have been taken according to the mitigation hierarchy."

- 58 Further, the full BBOP mitigation hierarchy clearly does not place mitigation beneath offset. Rather mitigation is overarching. The BBOP mitigation hierarchy²⁹ is defined as:

Avoidance: *measures taken to avoid creating impacts from the outset, such as careful spatial or temporal placement of elements of infrastructure, in order to completely avoid impacts on certain components of biodiversity.*

Minimisation: *measures taken to reduce the duration, intensity and / or extent of impacts (including direct, indirect and cumulative impacts, as appropriate) that cannot be completely avoided, as far as is practically feasible.*

Rehabilitation/restoration: *measures taken to rehabilitate degraded ecosystems or restore cleared ecosystems following exposure to impacts that cannot be completely avoided and/ or minimised.*

Offset: *measures taken to compensate for any residual significant, adverse impacts that cannot be avoided, minimised and / or rehabilitated or restored, in order to achieve no net loss or a net gain of biodiversity.*

²⁶ Regional Freshwater Plan; "Policy 4.2.33A. Remedying or mitigating can include the concept of offsetting. "Offsetting" means the provision of a positive effect in one location to offset adverse effects of the same or similar type caused by the Transmission Gully Project at another location with the result that the overall adverse effects on the values of the waterbodies are remedied or mitigated."

²⁷ In particular, comparing the approach taken in the Environment Court's One Plan decision (in relation to Indigenous Biological Diversity) (*Day v Manawatu-Wanganui Regional Council* [2012] NZEnvC 182), and the Board of Inquiry's decision on the Transmission Gully Plan Change (Final Decision and Report of the Board of Inquiry into the New Zealand Transport Agency Transmission Gully Plan Change Request, 5 October 2011).

²⁸ BBOP Standard, page 17 (Appendix IX to Mr Porteous' evidence).

²⁹ BBOP mitigation hierarchy as detailed at http://bbop.forestrytrends.org/pages/mitigation_hierarchy.

Offsets can take the form of positive management interventions such as restoration of degraded habitat, arrested degradation or averted risk, protecting areas where there is imminent or projected loss of biodiversity.

59 It is my opinion that in the BBOP hierarchy 'avoid and minimise' are equivalent to the RMA 'avoid' (minimise being a subset of avoid), 'rehabilitate/restore' is equivalent to the RMA 'remedy', and 'offset' is equivalent to the RMA 'mitigate'. Under BBOP, each of avoid, minimise, restore and offset are forms of mitigation. To treat offset as an additional layer creates a number of unnecessary problems when assessing a project under the RMA and is not consistent with the BBOP standards that are being put forward as best practice.

60 For example, in his evidence, Mr Porteous adopts the approach taken by the Proposed NPS, stating:

The application rightly identifies some adverse effects that require mitigation. Beyond that, residual adverse effects that cannot be otherwise avoided, remedied, or mitigated may need to be offset. (para 34)

61 In subsequent paragraphs Mr Porteous argues that we have failed to fully offset effects of the Project by not following this approach which is best practice under BBOP. However, he then has to reconcile our proposals for mitigation with his requirements for us to provide offsetting.

62 If the logic of Proposed NPS approach is followed, I would argue that Mr Porteous must demonstrate that the mitigation we have proposed is inadequate and that there will be residual effects before he can require us to provide biodiversity offsets. He does not do this in his evidence, but rather replaces occurrences of the word 'mitigation' in the EIA and my EIC, with the term 'offset' to make his point. For example:

The applicant proposes a 'simple multiplier' in the absence of available tools for calculating areas required for offsetting. (his paragraph 36).

63 This is also not correct. At paragraph 81 of my EIC I stated:

There is no accepted tool for calculating mitigation requirements for the clearance of indigenous vegetation in New Zealand and international tools are not appropriate, although tools are in development. We have therefore used a simple multiplier to determine the extent of revegetation required to mitigate for terrestrial habitat loss.

64 Mr Porteous then goes on to reference our Table 46 as "resulting in a proposed offset of 5.4 ha". In fact, the Table Mr Porteous is referring to is titled 'Mitigation Calculations'.³⁰

³⁰ Table 66 in Technical Report 26.

65 I believe this conflict proves my point that offsetting under BBOP is, in fact, interchangeable with mitigation under the RMA.

66 Mr Porteous notes that since the Transmission Gully proposal was discussed, BBOP has published a Standard on Biodiversity Offsets. He argues that because we have not carried out our assessment according to that Standard, the assessment is inconsistent with best practice and concludes:

However, in light of recent developments, I do not consider that the approach taken by NZTA's experts on biodiversity offsetting is in line with best practice and refute Mr Fuller's statement in his rebuttal [sic] evidence in which he states that international biodiversity offsetting tools are 'inappropriate' in the New Zealand context. (para 41)

67 Mr Porteous is incorrect, but I suspect we are arguing at cross purposes. In my EIC,³¹ I was discussing tools needed to calculate mitigation or offsetting requirements, such as Habitat Hectare³² or UMAM (Uniform Mitigation Assessment Method).³³ I was not discussing biodiversity policy or strategy documents like the new BBOP Standard. The tools I refer to cannot be readily applied to New Zealand as they rely, for example, on the provision of reference sites or on unique land use classifications (work which is yet to be carried out in New Zealand).

Mitigation (offset) Calculations

68 Both Mr Porteous (paragraph 36 to 41) and Ms Myers (paragraph 6.1 to 6.8) criticise the Project team's use of a simple multiplier for mitigation calculations for terrestrial environments.

69 The primary function of an ecological mitigation (biodiversity offsetting) tool is to calculate a quantum of ecological benefit needed to balance / compensate / offset for ecological loss. For example, the Stream Ecological Valuation (SEV) tool used for the stream assessment considers the current and potential ecological services (value) provided by the stream to be impacted, and the current and potential ecological services (value) of the mitigation site to determine an extent of restoration which will balance the loss. The result is always a multiplier ranging from about 1.0 up to 6 or 7. This acknowledges that you must raise the value of a lot of existing stream to mitigate (or offset) for the permanent loss of another section of stream.

³¹ My EIC, paragraph 81.

³² DSE (2004) Vegetation Quality Assessment Manual–Guidelines for applying the habitat hectares scoring method. Version 1.3. Victorian Government Department of Sustainability and Environment, Melbourne.

³³ Florida Department of Environmental Protection: Chapter 62-345, Florida's Uniform Mitigation Assessment Method.

- 70 The SEV tool has been available for streams for several years, but there is not currently an equivalent tool available in New Zealand for terrestrial ecosystems.
- 71 In the absence of a tool, I have for many years been applying a simple multiplier which acknowledges that (for instance) there will be a time delay between loss and successful mitigation which will be different for different types of habitat.
- 72 I explain my rationale for a simple multiplier in paragraphs 81 to 86 of my EIC. I admit that this multiplier is not based on comprehensive modelling or any complicated formulae. Rather, it is based on common sense and experience.
- 73 The multipliers used for this Project, and the resulting calculations of proposed mitigation requirements, were presented to various groups through development of the AEE.³⁴ At these presentations, we were open to discussion with stakeholders (including KCDC, GWRC and the Department of Conservation) as to whether the multipliers were appropriate. However, they were not questioned or challenged until submissions were received.
- 74 I note that DOC is developing a tool it calls the Condition Offset Model for determining mitigation/offsetting requirements. However, this tool still has significant limitations and in my opinion this tool is not ready.
- 75 I anticipate that within a few years, a tool will be developed and accepted by practitioners into the ecological impact assessment process and I look forward to this. However, for now I am very comfortable with the approach we have taken to calculate mitigation based on a simple multiplier.

BBOP Principles

- 76 At paragraph 6.7 of her evidence, Ms Myers lists "*the key BBOP principles*" and states that the Project team should have applied these in our assessment of effects.
- 77 I contend that the BBOP principles are not new or revolutionary approaches to assessment. Concepts like no net loss, mitigation hierarchy, cumulative effects, direct and indirect effects, irreplaceability, and landscape context, have been part of the language of ecologists since ecology was first recognised as a discipline in the 1960s. The BBOP principles are logical statements of approach that should be followed by any ecologist carrying out an ecological assessment and following good practice.

³⁴ As itemised in the EIC of Mr Park paragraphs 20.5, 30 and 58.

78 In the absence of New Zealand guidance on ecological impact assessment,³⁵ I have for many years based my assessment methodology on the internationally recognised IEEM³⁶ guidelines. The IEEM approach and principles are entirely consistent with those of BBOP. While the Project's ecology team has not explicitly listed and addressed each of the BBOP principles in our assessments, I consider that the ecological assessment for the Project has been carried out in a manner that by default addresses the issues identified as important by the BBOP principles.

79 However, for the avoidance of doubt, I will now address each of the ten BBOP principles as set out in the BBOP's Standard on Biodiversity Offsets.³⁷ I note in doing so that the principles listed by Ms Myers (paragraph 6.7) have been superseded by the new Standard attached to Mr Porteous' evidence. I have used the more recent version in my assessment below.

Principle 1: Adherence to the mitigation hierarchy

80 The BBOP mitigation hierarchy has been followed throughout development and assessment of this Project. The mitigation hierarchy as defined by this principle is Avoid, Minimise, Remedy (Rehabilitate), and Mitigate (Offset).

81 The direct and indirect effects of the Project were considered and our assessment was structured accordingly. I consider that the Project ecology team has explored all avenues to avoid or minimise adverse effects and this is well documented.³⁸

82 Additional opportunities to minimise effects during construction are identified and required by conditions.³⁹

Principle 2: Limits to what can be offset

83 In my view, the extensive shaping process that has been carried out has led to the avoidance of all significant ecosystems and habitats, therefore issues of irreplaceability have been avoided. This conclusion has been arrived at following a thorough assessment of the risk of residual effects that cannot be avoided, remedied or mitigated, and in light of options for adaptive management.⁴⁰

³⁵ I note that my professional body, the Environment Institute of Australia and New Zealand (EIANZ), is in the process of developing guidance for Australasia.

³⁶ IEEM (2006) Guidelines for Ecological Impact Assessment in the United Kingdom - Institute of Ecology and Environmental Management.

³⁷ See Appendix IX to Mr Porteous' evidence, pages 17-22.

³⁸ In particular, in Technical Reports 26-31, the Assessment of Environmental Effects, and the evidence in chief of the Project ecology team.

³⁹ For example, proposed Condition G.41.

⁴⁰ See Technical Report 26, Section 12.

Principle 3: Landscape context

- 84 The landscape, urban design and ecology teams have collaborated throughout this Project. They have consulted with biodiversity officers within GWRC, KCDC and DOC to ensure that our approach to mitigation design and the identification of appropriate mitigation sites has taken into account both localised needs and the wider landscape context. In fact, a number of the ecological mitigation proposals were recommended by these Agencies (e.g. former Waikanae Oxidation Ponds as wetland mitigation).
- 85 In particular, the Project team sought to ensure that landscape mitigation is integrated with ecological mitigation to provide the greatest overall benefit.⁴¹

Principle 4: No net loss

- 86 The goal of no net loss is stated by the NZTA in its 2008 Environmental Plan⁴² as follows: "*E2. No net loss of native vegetation, wetlands, critical habitat or endangered species*". This philosophy was acknowledged in our assessment and by the Project team.
- 87 A total of 30.7 ha of terrestrial, wetland and riparian rehabilitation and revegetation, and the restoration of 5.25 km of stream, is proposed as mitigation for the loss or modification of 3.8 ha of secondary forest (mahoe, kanuka), 1.8 ha of modified wetland, and the loss or modification of 2.9 km of streams and drains.⁴³
- 88 Sources of risk and uncertainty have been identified and addressed through consent conditions which will direct development of the Ecological Management Plan (Condition G.34 to G.37) and adaptive management processes (Conditions G.38 to G.40).
- 89 I consider the mitigation proposed, together with the ongoing monitoring and adaptive management that is required, will result in as close to no net loss as it is possible to attain with current understanding of ecological and biological values and processes.

Principle 5: Additional conservation outcomes

- 90 In addition to the terrestrial revegetation and stream restoration required as mitigation for adverse ecological effects, 65.3 ha of indigenous planting will be carried out along the alignment for the purpose of landscape mitigation. This will include an additional 49.6 ha of terrestrial vegetation and 15.7 ha of wetland vegetation (flood storage areas and stormwater treatment).
- 91 I consider that, in the long term, these landscape works combined with ecological mitigation, will result in a significant increase in

⁴¹ Refer proposed Conditions DC.55 and G.36.

⁴² NZTA 2008: Environmental plan: Improving environmental sustainability and public health in New Zealand. Published: Jun 2008.

⁴³ Proposed Conditions G.42 and G.43.

indigenous habitat diversity and extent along the alignment and provide a significant ecological benefit.

Principle 6: Stakeholder participation

- 92 The process of developing the assessment of effects has involved numerous workshops and presentations where mitigation was discussed on many occasions with stakeholders.⁴⁴ The process for finalising management plans and consent conditions will involve further stakeholder involvement as required by proposed Conditions DC.54(c) and G.35.

Principle 7: Equity

- 93 The full cost of mitigation works will be borne by the NZTA. Therefore, there are no issues of equity.

Principle 8: Long-term outcomes

- 94 All the mitigation that is proposed, together with the requirements for ongoing monitoring and management of sites once mitigation has been carried out, have considered long-term outcomes. The design and management of mitigation will be carried out based on an adaptive management approach, incorporating monitoring and evaluation. Proposed conditions specify the mitigation outcomes that must be achieved and the monitoring required to ensure the outcomes occur and are long-term.⁴⁵

Principle 9: Transparency

- 95 I consider the manner in which the Project team has calculated mitigation requirements, and communicated to stakeholders during the various workshops carried out during development of the assessment, could not have been more transparent. I note that the simple multiplier used to determine terrestrial mitigation requirements is very transparent and can be simply understood by a range of stakeholders, in contrast to other more detailed models.

Principle 10: Science and traditional knowledge

- 96 During the development of the ecological assessment, regular discussions were undertaken with Mr Kamo relating to potential ecological effects and mitigation opportunities to ensure that the proposed assessment and mitigation package sufficiently considered and took into account matters of cultural importance.
- 97 Members of the Project ecology team also met with representatives of Te Ati Awa Ki Whakarongotai during the Project to discuss areas of cultural value and provide input into cultural and archaeological investigations and assessments. The draft Landscape Management Plan is will be the key document for managing landscape and ecological mitigation planting and proposed Condition DC. 54(c) requires the LMP to be prepared in consultation with Te Ati Awa ki Whakarongotai and Takamore Trust and Te Runanga O Toa

⁴⁴ Refer to the rebuttal evidence of **Mr Park**, Annexure G.

⁴⁵ Refer proposed Conditions G.34(d) viii to xii and G.43.

Rangatira Inc (the latter where the works are within or directly affect Queen Elizabeth Park). Similarly, in relation to wetland hydrology (an area of concern to iwi), proposed Condition G.29 requires the GMP to be finalised in consultation with Te Ati Awa ki Whakarongotai and Takamore Trust. Finally, a number of other conditions also require input and briefings to ensure contractors are aware of matters of importance to iwi (e.g. proposed Condition G.11(d)).

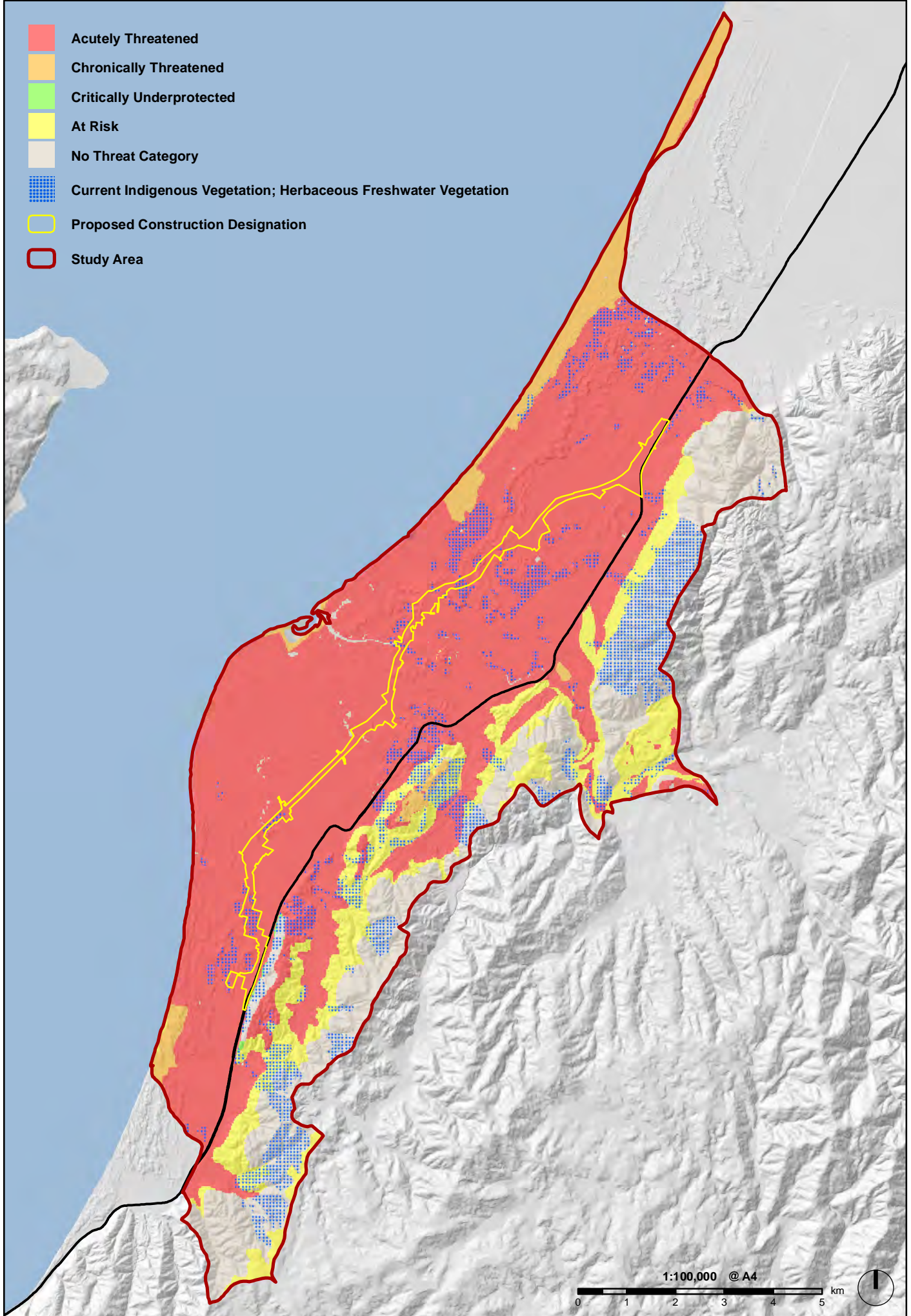


Stephen Fuller

26 October 2012

ANNEXURE A: LENZ THREAT OVERLAY FOR THE KAPITI COAST

- Acutely Threatened
- Chronically Threatened
- Critically Underprotected
- At Risk
- No Threat Category
- Current Indigenous Vegetation; Herbaceous Freshwater Vegetation
- Proposed Construction Designation
- Study Area



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