**BEFORE TAUPŌ DISTRICT COUNCIL**

**IN THE MATTER OF** the Resource Management Act 1991 ('the Act')

**AND**

**IN THE MATTER OF** of an application for a Proposed Plan Change 36 Whareroa North Residential Area

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# REBUTTAL EVIDENCE OF WILLIAM BRUCE SHAW ON BEHALF OF TAUPŌ DISTRICT COUNCIL

Date: 15 May 2020

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## QUALIFICATIONS AND EXPERIENCE

1 My qualifications and experience are set out in my Evidence-in-Chief.

## CODE OF CONDUCT

2 I have read the Code of Conduct for Expert Witnesses outlined in the Environment Court's Consolidated Practice Note and have complied with it in preparing this evidence. I also agree to follow the Code when presenting evidence. I confirm that the issues addressed in this brief of evidence are within my area of expertise and that I have not omitted to consider material facts known to me that might alter or detract from my opinions.

## SCOPE OF EVIDENCE

3 In my rebuttal evidence I address relevant matters in the evidence of Mr Chris Wedding and Ms Joanne Lewis, for the applicant, followed by my conclusions.

## COMMENTS ON MR WEDDING'S EVIDENCE

4 At Paragraph 4.2 Mr Wedding notes that he visited the site on a second occasion in February "to gain an understanding of the requirements of bridge construction over the Whareroa Stream". I note, however, that no detailed or updated information has been provided in Mr Wedding's evidence on this matter. This is also referred to further below in this rebuttal evidence.

5 In Paragraph 5.3, Mr Wedding presents descriptions of vegetation in the "North Side Development Area" from Bioresearches (2005), using the same terminology for the classification of indigenous woody vegetation, i.e. "low scrub", "tall scrub", and "scrub". In the application, part of this area is referred to as "regenerating scrub". As noted in Paragraphs 39, 40, 41, and 66 in my Evidence in Chief, these "scrub" types, based on the height information provided in Bioresearches (2005 and 2019), actually comprise secondary forest, and should be referred to as such.

6 At Paragraph 5.4, Mr Wedding correctly notes that "most of these areas are within SNA 062", except for the 'pasture' and 'low scrub of bracken and shrubs'.

7 At Paragraph 5.8, Mr Wedding attributes the threat status of falcon and kererū to "Wildlands (2020)" but the status given for these two species in my Evidence in Chief is actually quoted directly from the Southern Settlements Structure Plan (TDC 2013).

I am not sure of the origins of the threat ranking given in the Structure Plan but the species records are likely to be from Bioresearches (2005) and the threat rankings were probably from about the same time. Mr Wedding correctly presents the current threat classifications of Not Threatened for kereru and At Risk-Recovering for bush falcon, which are from Robertson *et al*. (2017).

8 At Paragraphs 5.9-5.15, Mr Wedding agrees that indigenous vegetation and habitat in SNA 062 on the subject property meets the following WRC RPS criteria for evaluation of ecological significance: 3, 4, 7, 9, and 11.

9 It is notable, however, that Mr Wedding does not refer to indigenous vegetation within 'Zone 2' – as mapped and described by Bioresearches (2005 and 2019) - in his assessment of ecological significance. As noted in my Evidence-in-Chief, at Paragraph 39, this area is described by Bioresearches (2019) as being predominantly kānuka and five finger that is 8-9 metres tall, comprising early successional secondary indigenous forest. I note that, in relation to "Zone 2 mixed scrub", Bioresearches (2005) noted that "The apparent youthfulness of the scrub is belied by the several dozen or so large cabbage trees (to *c.*11 m tall and 30 cm dbh) it contains." Given its composition and stature, and that is an integral part of the area of indigenous forest that comprises SNA 062, my view is that Zone 2 triggers the same criteria in the Waikato RPS.

10 Mr Wedding addresses the area referred to as "Whareroa Stream Riparian Habitat" - which is also part of SNA 062 – at Paragraphs 5.16-5.21, based on Bioresearches (2005). He agrees with their assessment that vegetation and habitat in this area is significant as it meets WRC RPS Criteria 4, 9, and 11. This area is contiguous with indigenous forest in the 'North Side Development Area' and is also part of SNA 062. As such it is not clear, in Mr Wedding's view, why it only triggers three of the RPS criteria (4, 9, and 11) while the contiguous 'North Side Development Area' triggers five criteria (3, 4, 7, 9, and 11).

11 Based on the description provided by Bioresearches (2005), the area referred to as 'Whareroa Stream Riparian Habitat' contains indigenous forest up to 16 metres tall, and is similar to the 'North Side Development Area'. Mr Wedding (Paragraph 5.16) clearly agrees with this view as he states that "this description is consistent with the five finger and kānuka scrub that occurs in the North Side Development Area". Based on the information presented by Bioresearches (2005 and 2019) and by

Mr Wedding, my view is that it would trigger the same criteria for ecological significance.

12 As noted in my Evidence-in-Chief, Bioresearches (2019) did not describe or evaluate the vegetation in the 'Whareroa Stream Riparian Habitat'. It is notable that Mr Wedding also does not provide an updated description of this area in his evidence.

13 Mr Wedding (Paragraph 4.2) visited the site in February 2020 specifically to "gain an understanding of the requirements of bridge construction over the Whareroa Stream". It is notable, then, that Mr Wedding's evidence does not provide any information on the stream and its ecological significance. No information is provided on potential effects on the stream, and how any possible adverse effects are to be avoided or mitigated.

14 At Paragraph 7.1, Mr Wedding refers to my communication in September stating that a reasonably basic update of ecological information was required. This was a reasonable requirement at that time, to be able to judge whether the previous report (Bioresearches 2005) was still accurate, given that *c*.14 years had elapsed since the original report was prepared.

15 At Paragraph 7.2, in relation to 'Zone 2' he states: "Notably, the 'low scrub of bracken and shrubs', outside SNA 062 in the North Side Development Area, now has a canopy cover consistent with surrounding vegetation".

16 This statement clearly indicates that there is evidence of significant vegetation change and development over the 14 years since Bioresearches (2005) was produced, yet, at Paragraph 7.3, Mr Wedding claims that "I consider that little change, other than some increase in stature, would have occurred in the 14 years since the 2005 assessment". Comparison of Bioresearches (2005) and Bioresearches (2019) indicates, however, that in addition to a change in stature, there have also been changes in species composition and canopy cover.

17 At Paragraph 7.4 Mr Wedding states that an "ecological mitigation and offsetting proposal" should be required with the application for a resource consent. He goes on to state that this should also include "a reassessment of ecological values, including the Whareroa Stream Riparian vegetation and fauna values, particularly lizards, birds, and bats. This information should be collected using standardised, repeatable

methods and serve to provide quantifiable measures against which a biodiversity offset could be measured". While I agree with Mr Wedding in relation to the need for quantifiable measures, he does seem to be indicating that the information available for the 'Whareroa Stream Riparian Habitat' is not currently adequate. In my September 2019 request for a reasonably basic information update, I did not draw a distinction between the 'North Side Development Area' and the 'Whareroa Stream Riparian Habitat', so I don't know why they focussed only on the former.

18 At Paragraphs 8.1-8.3 Mr Wedding considers that formation of access through SNA 062 to the proposed development will result in adverse effects on significant indigenous vegetation and biodiversity values, and concludes that "cumulative potential adverse effects of vegetation degradation would be significant if not managed or offset".

19 No attempt has been made, however, to quantify the extent of vegetation clearance and associated edge effects. At Paragraph 8.4, it is claimed that a series of measures could result in a 'Net Environmental Gain and positive biodiversity outcomes", with basic principles associated with the mitigation hierarchy outlined in Paragraphs 8.5-8.7. However, no particular measures are specified.

20 At Paragraph 8.8, it is claimed that "potential fragmentation effects associated with a permanent road and bridge would be minor in nature with respect to fauna use of the SNA". Mr Wedding goes on to discuss whitehead (which currently have a threat status of At Risk-Declining (Roberston *et al*. 2017) and suggests mitigation for them by provision of canopy connectivity above the road. While meritorious, based on my experience of observing whitehead behaviours over a period of 4-5 decades, this is unlikely to have any positive effect on whitehead because they are easily capable of crossing small open areas. It is also notable that at Paragraph 7.4, Mr Wedding is stating that further ecological information is needed on the 'Whareroa Stream Riparian Habitat', yet at Paragraph 8.8 he is claiming that fragmentation effects will be minor.

21 Habitat degradation is discussed in Paragraphs 8.9 and 8.10, including human-related effects such as noise, lighting, human disturbance (bush track creation, rubbish dumping, weed spread) and predation pressure by rodents and domestic cats. These are all valid concerns, but edge effects (mentioned in his Paragraph 8.2) are not discussed in relation to habitat degradation. Detectable edge effects have long been known to extend for up to 50 metres into indigenous forest (Young and

Mitchell 1994), and the proposed new road would result in a large proportion of the area being affected by edge effects.

22 A very strong claim is made by Mr Wedding in Paragraph 8.10 that the "provision of dense buffer planting and a robust, ongoing pest animal control programme would sufficiently mitigate potential degradation effects and enhance the ecological integrity of SNA 062 within the North Side Development Area, providing substantial benefits to indigenous wildlife values in adjacent habitats within the North Side Development and Whareroa Stream Habitat". My view is that the scale and types of effects have not been quantified, no details have been provided for the proposed mitigation of effects, and this claim is currently a statement of opinion rather than a robust assessment of effects and measures to address them.

23 At Paragraph 8.11, Mr Wedding goes on to state that "in my opinion, there would be significant residual adverse effects" …. "associated with vegetation removal for road construction", "following measures I've described to avoid, remedy and mitigate". I agree with this assessment, even though Mr Wedding has provided no specific details of the types and scale of these measures.

24 In Paragraph 8.13, Mr Wedding claims that "in my experience, biodiversity offsets in New Zealand often achieve no net loss of indigenous biodiversity", recognising the need for the use of a multiplier to address "temporal lag between loss and gain". The reality is, however, that there has been a long history of non-achievement of no nett loss, let along nett gain, associated with development projects. Brown *et al*. (2013) showed that ecological compensation[1] (i.e. biodiversity offsets) were only achieved in *c.*65% of cases (i.e. *c.*35% were not achieved). The need to address the continuing loss of indigenous biodiversity in Aotearoa/New Zealand is a strong driver of the proposed National Policy Statement on Indigenous Biodiversity.

25 At Paragraph 8.14, and in Figure 2, Mr Wedding purports to have identified "more than 20 ha of restoration and enhancement opportunities within and around SNA 062 that would support a biodiversity offset" approach. However, no details are provided on these sites, e.g. tenure, vegetation and habitats, condition, future protection status, and whether biodiversity gains could be achieved at these sites and provide

[1] Ecological compensation was defined as a trade-off whereby loss of natural values is remedied or offset by a corresponding compensatory action on the same site or elsewhere, determined through the process of an Environmental Impact Assessment.

biodiversity gains additional to what would occur by way of natural regeneration at the sites identified.

**COMMENTS ON MS LEWIS' EVIDENCE**

26 Ms Lewis' evidence, at Appendix 8, provides a 'Whareroa North Development Plan". Section 2 of this Plan contains the following provisions:

"g) Minimise indigenous vegetation removal, earthworks, and the footprint of any structures (including bridge, retaining structures) and roading within areas of landscape and/or natural value identified in the Taupo District Plan;

h) In the area shown as "Regenerated Scrub", provision for house sites and protected indigenous vegetation through, for example, clusters of house sites (secured by building envelopes) at the road frontage and protected indigenous vegetation behind (to minimise fragmentation and achieve a protected buffer to SNA062);

i) Manage the adverse effects of loss of indigenous vegetation, fauna and their habitats through best practice management and restoration methods. This includes:

- careful timing of any indigenous vegetation removal from the SNA, wildlife relocations, habitat replacement and enhancement;
- pest predator control;
- dense buffer planting (including with future canopy species) along new edges created by road through SNA062;
- dense buffer planting where residential lots adjoin SNA062;
- other restoration activities that follow the hierarchy of mitigation to avoid, remedy and mitigate;
- offsetting or compensation of any significant residual adverse effects in accordance with best ecological practice to achieve a Net Environmental Gain. Note: any offset planting required will be undertaken within, or contiguous with SNA062;

j) Legal protection in perpetuity of the following areas of indigenous vegetation:

- SNA vegetation and areas of offset planting;
- Areas shown as “Proposed indigenous planting” on the Whareroa North concept plan (and any other indigenous vegetation planting undertaken as part of the subdivision construction);
- SNA062 vegetation and areas of mitigation/offset planting;
- in the area described as “regenerated scrub”, indigenous vegetation which is outside of the building envelopes (and access) authorised through the subdivision process. Note: where the indigenous vegetation described above is within a residential allotment, protection (including the obligation to maintain the vegetation and replace dead or dying plants) will be secured by Consent Notice.”

27 In Section 3, Ms Lewis notes that the development will occur in stages, and that there will be a “Preliminary Stage” that involves “further site investigations and assessments (including geotechnical, archaeological, ecological and landscape).”

28 Ms Lewis goes on to note that Stage One will involve bridging of the Whareroa Stream and provision of “indigenous vegetation planting, and associated biodiversity mitigation/offset measures etc”.

29 In the following paragraph, in relation to the “Preliminary Stage”, Ms Lewis notes that:

“To inform the detailed subdivision design process a range of site investigation and pre-design work will be undertaken. This will include geotechnical, ecological, landscape, and archaeological site investigations and assessments.” [Underlining added for emphasis].

“Geotechnical site investigation work, involving on-site geotechnical drilling, testing and investigation, includes within the vegetated escarpment (necessitating vegetation removal and tracking within SNA062 for access to and clearance of the investigation sites). Resource Consent/s will be sought to authorise these geotechnical investigations, including biodiversity offsetting for the associated loss of indigenous vegetation from SNA062.”

30 In Section 4, in relation to Access, Ms Lewis notes that:

"It is intended to minimise the "footprint" of the access road where it traverses the steeper part of the site. This recognises not only the limitations imposed by the topography, but also the sensitive nature of the vegetation in this area. Separate pedestrian links and cycling links will be provided to minimise "inter-modal" conflict over this section of the access road. [Underlining added for emphasis].

31 While it is meritorious that the sensitive nature of the vegetation in this area is recognised, it seems contradictory that separate pedestrian and cycling links will be created, which will require even more clearance of sensitive indigenous vegetation.

32 In Section 5, in relation to Anticipated Environmental Outcomes, Ms Lewis provides a summary of "key outcomes of the subdivision design", which include:

"Existing and proposed planting that will visually integrate the development into the landscape and provides key buffers."

"a) Development footprint (bridge, access road) is minimised in areas of natural and landscape values identified in the District Plan as far as practicable.

b) Bridge crossing and access is designed clear of the Whareroa Stream bed and to minimise adverse effects on natural character of the riparian area.

c) Loss of indigenous vegetation and habitats from SNA062 and the area of "regenerated scrub" is remedied, mitigated or offset by ecologically appropriate methods, such as planting within or contiguous to SNA062.

d) Long term sustainability of SNA062 is enhanced by legal and physical protection.

e) Visual and landscape effects associated with road access are mitigated.

f) Existing erosion feature is arrested.

g) Environmental values of the Whareroa Stream and escarpment are protected through low-impact stormwater design."

33 Overall, I have the following concerns with the approach proposed by Ms Lewis:

- She states that further site investigations are necessary in relation to ecological matters, which is an acknowledgment that the information provided with the current application is inadequate.

- She states that “associated biodiversity mitigation/offset measures etc” will be developed at Stage One, but no details are provided of those measures.

- Vehicle access across the Whareroa Stream, through the associated riparian zone, and through SNA 062 are acknowledged as significant issues but this is a high level acknowledgment and no details are provided on how they are to be addressed, e.g. areas of particular vegetation types to be cleared and the mitigation to be provided.

- Because there are no details on the specific measures to be used to avoid or minimise adverse effects, and no details on the measures to be used to mitigate or offset those impacts, there is no way to evaluate whether the non-specific general measures proposed are viable or whether they will be effective.

**CONCLUSION**

34 Mr Wedding’s evidence does not provide the type of certainty that is required, in my view, to progress a development project of this type, for the following reasons:

- Vegetation and habitats in SNA 062 and Zone 2 are ecologically significant.

- No ecological information has been provided for the bridge crossing site.

- There is no current (i.e. up-to-date) information on a significant proportion of the site, i.e. the Whareroa Stream Riparian Habitat.

- The stature of the indigenous vegetation to be affected is referred to as “scrub” when it is actually forest.

- A suitably detailed assessment of ecological effects has not been provided, e.g. the area and type(s) of vegetation to be lost, the extent of edge effects, mitigation measures to address the types and scales of effects proposed, and so on.

- No information is provided on the proposed biodiversity offset sites apart from an indication of their locations.

35 The evidence of Ms Lewis does not provide any details on how adverse effects are to be avoided or minimised, and no details are to be provided on the measures to be

used to mitigate or offset adverse ecological effects, meaning that there is no way to determine whether the approach proposed is viable or whether it will be effective.

36 Because of these deficiencies, the information provided does not meet the requirements of the Southern Settlements Structure Plan. It also doesn't address key policy requirements in the District Plan and the Waikato RPS.

37 Accordingly, on ecological grounds, I can't support approval of the Plan Change, which should be rejected.

**REFERENCES**


Bioresearches 2005: Ecological characteristics of the north side development area and adjoining Whareroa Stream riparian habitat. Bioresearches Group Ltd Report. Prepared for Blance and Associates. 51 pp plus photographs.

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W.B. Shaw

15 August 2020