

**BEFORE INDEPENDENT HEARING COMMISSIONERS
APPOINTED BY THE HAMILTON CITY COUNCIL**

IN THE MATTER of the Resource Management Act 1991 (**Act**)
AND

IN THE MATTER of an application for subdivision and land use
consent for the Amberfield development
pursuant to the Act.

APPLICANT Weston Lea Limited

CONSENT AUTHORITY Hamilton City Council

**EVIDENCE-IN-REPLY OF SARAH MEGAN FLYNN
FOR WESTON LEA LIMITED**

Dated: 1 May 2019

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SUMMARY OF EVIDENCE

1. My full name is Sarah Megan Flynn. I am a Senior Ecologist with expertise in vegetation ecology, ecological effects assessment and restoration management.
2. I summarise my evidence, according to the key headings in this statement, as follows:

Ecological value, significance and avoidance

- (a) In my opinion, the proposed development and associated habitat management accords with the Waikato Regional Council's policy provisions for significant ecological features, as the valued features that contribute to its significance are retained, enhanced, and permanently protected on the site.
- (b) In my view, formal protection of key corridors and habitat features, and promotion of accord between landowners, developers and conservation managers to help facilitate landscape-wide habitat networks, is an important benefit of the proposed development.
- (c) I consider that the "mitigation hierarchy" has been appropriately implemented in order to achieve the best ecological outcome, for bats as well as other ecological features.

Management of uncertainty

- (d) I consider that proposed consent conditions ensure a low likelihood of adverse effects arising through failure of mitigation. In my opinion, it is reasonable to accept some variability between predicted and actual timeframes and specific management regime requirements, and these are appropriately addressed by way of an adaptive approach.
- (e) I do not accept that the proposed bat habitat enhancement is experimental. The proposed habitat enhancement closely replicates "cultural landscape" features (riparian vegetation, hedgerows and shelterbelts) that bats are currently using. These features are not

difficult to establish or maintain, and performance measures are direct and easy to implement.

Comments on proposed conditions

- (f) I consider the proposed conditions with respect to ecological matters to be appropriate.
- (g) In my opinion, effective implementation of predator control would require a collective, co-ordinated and large-scale effort between multiple stakeholders. I consider site-wide pest control efforts alone are likely to be of limited benefit to bats, as sites would be subject to continual re-infestation.
- (h) I do not consider that there is any basis for requiring an offset/compensation package due to residual effects on bats or any other ecological values.

INTRODUCTION

3. My full name is Sarah Megan Flynn. I am a Senior Ecologist and Principal at Boffa Miskell Limited, a national firm of consulting planners, ecologists and landscape architects.

Qualifications and experience

4. I hold the qualifications of BSc (1993), MSc (1st class Hons) in Botany (1995) and PhD in Environmental Science (2011), all from the University of Auckland, New Zealand. My particular areas of expertise are in botany and forest ecology. I have more than 23 years' experience as a consultant in ecology and resource management and have undertaken work for a wide range of clients around New Zealand, including local authorities, land developers, infrastructure and power sectors.
5. Such work has included district-wide surveys to identify "Significant Natural Areas", evaluation of the ecological significance of ecological features on private property, and assessment of ecological effects of subdivision and consequent development. I have also been responsible for developing management plans for the maintenance and enhancement of natural areas and ecological features in reserves and private properties throughout New Zealand.
6. I have also undertaken a variety of projects pertaining to ecosystem restoration and management, and provision of ecology-related strategic and policy advice. I am an experienced expert witness and have presented evidence in numerous council and Environment Court hearings, including participation in expert caucusing.

Purpose and scope of evidence

7. I have been retained by Weston Lea Limited to prepare a statement of evidence-in-reply to submitters, addressing interpretation of the overall ecological values, and how effects will be managed to ensure significant values are appropriately protected and managed, and adverse effects are avoided, remedied or mitigated.

8. I visited the site for half a day on 17th April 2019 with Mr Andrew Blayney, who gave me a comprehensive tour that included visits to all ecological features within the site that are described and discussed in reports and evidence.
9. In preparing this evidence I have read the following documents:
 - (a) Statement of evidence (and evidence in reply) prepared by Ms Georgia Cummings
 - (b) Statement of evidence (and evidence in reply) prepared by Mr Andrew Blayney
 - (c) Statement of evidence prepared by Dr Stuart Parsons
 - (d) Statement of evidence (and evidence in reply) prepared by Mr David Serjeant
 - (e) Boffa Miskell Ltd. 2018. Amberfield – Peacocke Structure Plan: Terrestrial Ecological Assessment. Prepared for Weston Lea Ltd;
 - (f) Boffa Miskell Ltd. 2018a. Amberfield project – Hamilton City Council s92 response: Terrestrial ecology. Prepared for Weston Lea Ltd;
 - (g) Boffa Miskell Ltd. 2019. Amberfield project – Ecological Assessment Addendum Prepared for Weston Lea Ltd;
 - (h) Council's 42A report
 - (i) Statement of evidence prepared by Dr Laurence Barea
 - (j) Statement of evidence prepared by Dr Bruce Clarkson
 - (k) Statement of evidence prepared by Dr Kerry Borkin
 - (l) Statement of evidence prepared by Dr Rebecca Stirnemann
 - (m) Statement of evidence prepared by Moira Pryde

CODE OF CONDUCT

3. I have read the Environment Court Code of Conduct for expert witnesses and agree to comply with it.

4. I confirm that the topics and opinions addressed in this statement are within my area of expertise except where I state that I have relied on the evidence of other persons. I have not omitted to consider materials or facts known to me that might alter or detract from the opinions I have expressed.

OVERVIEW OF KEY ISSUES

10. I will comment on the following matters raised in the evidence of submitters:
 - (a) The distinction between ecological value, importance, and significance;
 - (b) The mitigation hierarchy, and whether the principle of prioritising avoidance applies to all effects on significant features;
 - (c) Management of uncertainty; and
 - (d) Comments on proposed conditions.

ECOLOGICAL VALUE, SIGNIFICANCE AND AVOIDANCE

11. Various submitters note the ecological significance of the site in accordance with RPS criteria. I emphasise that “significance assessment” is distinct from the process of assigning value or importance to ecological features identified within a project’s zone of influence. A values assessment (based on data compiled from field assessments, existing information and literature) eliminates areas or features of low ecological value from further consideration, and enables assessment of the importance of actual or potential effects on other features of moderate or high value. The purpose is to evaluate risk of future events; therefore the data and analyses are probabilistic in nature.
12. As explained in Mr Serjeant’s EIC (paragraph 100), significance assessment responds to the requirement in RMA Section 6(c) for Councils “*to recognise and provide for the protection of areas of significant indigenous vegetation and significant indigenous fauna habitat*”, implemented through Regional Policy Statements, Regional and District Plans. The Waikato Regional Policy Statement (section 11A) uses broad criteria to identify sites that encompass significant ecological features, in order to signal the appropriate policy. For these sites, Policy 11.2 (requiring that significant values are retained) applies.
13. In my opinion, the proposed development and associated habitat management achieves the protection of significant ecological features envisaged in RPS Policy 11.2, in that it ensures “*the characteristics that contribute to its significance are not adversely affected to the extent that the*

significance of the vegetation or habitat is reduced", as bat populations and habitats (along with indigenous vegetation remnants) are retained on the site. Furthermore, the application provides certainty around maintaining and enhancing habitats and connective linkages across the site which are currently unprotected, as in the absence of development, planning controls do not provide a timely mechanism to suspend land-use change until bat populations and habitats are sufficiently protected and managed.

14. Dr Barea (paragraphs 3.3, 17.7, 18.2) asserts that the proposed development has not followed the mitigation hierarchy (avoid, remedy, mitigate in that order) as the proposal does not avoid all adverse effects to bats, with management of effects "inappropriately pushed to lower levels of the hierarchy". I do not agree, as I consider that Dr Barea's method of implementing the mitigation hierarchy would not produce the best outcome for bats.
15. In my opinion, consideration of the value of an ecological feature and the magnitude of effect is relevant to decisions about avoidance. Dr Barea (paragraph 17.5) allows no distinction between "important habitat that bats use" and "unimportant habitat that bats use". As explained by Ms Cummings in her EIR, the value of the roost habitat within the development footprint largely falls into the latter category.
16. Various submitters note the high threat status of bats, and assert that remediation, mitigation and offsetting may not be appropriate where the indigenous biodiversity is rare, at risk, threatened or irreplaceable (e.g., Paragraph 19.4 of Dr Barea's evidence). However, while bats are rare, potential habitat features for bats (i.e., mature trees) are relatively common in the landscape.
17. As explained in Dr Parsons' and Ms Cummings' evidence, bats range widely and need safe corridors between high-value core habitats and foraging habitats. In my opinion, the proposed development appropriately prioritises the maintenance and enhancement of high value habitat over the loss of individual trees. As Ms Cummings notes in her EIR, the likelihood that bats would continue to use individual trees interspersed throughout an urban-

density subdivision for roosting is low without intensive effort to buffer and connect them to other habitat features.

18. In contrast, Dr Barea's interpretation of the mitigation hierarchy is dogmatic and does not recognise the diminishing returns of avoiding all potential habitat features, or acknowledge that bats may be using poor quality habitat in a pastoral landscape because nothing better is available. I consider that avoidance of such habitat features does not improve the certainty of outcomes for bats.
19. Dr Barea asserts (Paragraph 17.9 of his evidence) that suitable bat roosts in the landscape encompassing the project are increasingly becoming a limited resource due to multiple development pressures. I note that this observation appears to be anecdotal, nevertheless if correct, I consider that a key reason for such a decline is the unprotected status of trees in rural Hamilton. In my view, formal protection of key corridors and habitat features, and promotion of accord between landowners, developers and conservation managers to help facilitate landscape-wide habitat networks, is an important benefit of the proposed development.

MANAGEMENT OF UNCERTAINTY

20. Uncertainty of outcomes with respect to the proposed mitigation (particularly associated with the vegetated buffer) and the untested nature of the proposed "buffered linear meadow" habitat enhancement are a key criticism of Dr Barea, Dr Clarkson, Dr Stirnemann, Ms Pryde and Dr Borkin, with an accompanying rationale, contend that any uncertainty is unacceptable and risks are an existential threat to the Hamilton bat population (e.g., Ms Pryde, para 7.6; Dr Stirnemann, Paragraph 5.1). However, in my assessment, the basis for this rationale is not robust, while such a binary analysis is unhelpful and does not guide decision makers in their risk assessment.
21. The concept of risk includes the probability of an effect, as well as the cost of the consequence of it occurring. In my opinion, submitters do not give the proposed mitigation any merit, and their evaluation predominantly focuses on a worst-case scenario. In contrast, I consider that proposed Condition 88 which provides for lot development deferral, and adaptive management

provisions (proposed Conditions 94 - 98) ensure a low likelihood of adverse effects arising through failure of mitigation. With respect to loss of roost trees, Ms Cummings notes in her evidence that removal of roost trees will adversely affect individual bats (and will therefore be mitigated). However, the consequence for the bat population as a whole is likely to be modest due to the limited availability of roost trees within the project footprint.

22. In my opinion, Dr Barea in particular (paragraphs 3.3, 17.3, 17.10, 18.2, 19.5, 20.2, 20.3 of his evidence) overstates the uncertainty of the project, misconstrues the intent of Dr Parsons' statements with respect to the viability of proposed mitigation, and implies a broad consensus that all experts doubt its likely success. I note that Dr Barea refers to conclusions about the need to offset residual adverse effects stated in the TEEA, but does not acknowledge that those effects were subsequently addressed through a substantive redesign of the project and the mitigation package.
23. This misperception is important in my view, as Dr Barea does not raise any specific, practical concerns with the certainty or viability of the proposed mitigation, and instead relies on the opinions of other experts as to its likely success to form his opinion (paragraph 19.5) of its appropriateness.
24. Dr Clarkson's comments (Paragraph 8.3) that bat commuting, foraging and roosting have not been factored in to the significance assessment, or that forest restoration in the minor gully should be prioritised, leads me to doubt that these submitters have a comprehensive understanding of the what the ecological mitigation package comprises.
25. As explained in Ms Cummings' EIR, the specific requirements for bat habitat are well understood, and (as outlined in Mr Blayney's EIR), I consider that there is no doubt that vegetation can be fairly quickly established and maintained in accordance with these requirements. Nevertheless, as ecosystems are subject to manifold environmental factors, gradients and chance events, practical uncertainty remains factored into their future management. In my opinion, this expected variability is appropriately addressed by way of an adaptive approach (proposed Condition 97). It is not sufficient to simply invoke avoidance under the precautionary principle on the

basis that uncertainty exists, because uncertainty is an inherent part of predicting future outcomes.

26. I do not accept that the proposed bat habitat enhancement is any more experimental than a conventional forest restoration project, which as Dr Clarkson notes, requires an expected 50 – 100 year timeframe before ecosystem processes start working independently of human intervention and success can be fully evaluated. In contrast, the proposed habitat enhancement closely replicates the features bats are currently using in the landscape, and performance measures are direct and easy to implement.
27. Mr Blayney (in his EIR) addresses Dr Clarkson's criticisms of the appropriateness, viability and timeframe for establishment of the proposed habitat enhancement, and I concur with his assessment.

COMMENTS ON PROPOSED CONDITIONS

28. I concur with Mr Blayney's response to Dr Clarkson's recommendations with respect to Consent Conditions.
29. Additionally, while I agree with Dr Clarkson (Paragraph 7.2 of his evidence) that appropriately qualified personnel should undertake the regulatory technical review of the Ecological Management Plan (Condition 66), I do not consider it necessary or appropriate to specify that they are external to Council, or to set a number of reviewers.
30. I disagree with Dr Clarkson's statement (Paragraph 6.17 of his evidence) that consent is being sought "*on the basis of trust that the applicant will develop appropriate management and monitoring plans, and implement best practice ecological restoration*". Rather, approved management plans and restoration measures are a proposed condition of consent.
31. I consider that Dr Clarkson's comments on the viability of proposed plantings for habitat enhancement (paragraphs 7.5 – 7.7) are not relevant as they deal with plantings in a revegetation context. A more appropriate context is the establishment of riparian plantings, shelterbelts or hedgerows, which are common features in the surrounding landscape and not difficult to establish or maintain. I note that the use of a mix of fast-growing species (such as

hoheria and ribbonwood) and longer-lived, moderately fast-growing species such as kanuka and totara, would ensure long-term persistence of these features with minimal maintenance.

32. I agree with Ms Pryde (Paragraph 8.3) that ongoing, landscape-wide predator control is key to the long-term persistence of the Hamilton bat population, and that bats are vulnerable to domestic (and feral) cats (I noted two apparently stray or feral cats in the vicinity of the Waikato River margin during my site visit). However, I do not envisage that the proposed subdivision will increase pest numbers or increase the vulnerability of bats to predation. Furthermore, given the likely presence of several highly fecund, and therefore probably abundant, wild predator species (particularly rats, stoats and feral cats), I consider that wandering domestic cats are unlikely to substantially increase the frequency of predation and/or non-lethal disturbance. As outlined in Ms Cummings' EIR, disturbance by cats is most appropriately mitigated through increasing 'safe sites' in the area through installation of protected artificial roosts.
33. In my opinion, effective implementation of predator control will require a collective, co-ordinated and large-scale effort between multiple stakeholders. I understand from discussions with Mr Blayney and Mr Inger that the Applicant has endeavoured to facilitate a collaborative management approach to city-wide bat conservation, however none of the administrative stakeholders have so far been willing to provide leadership on this matter. In the interim, I consider site-wide pest control efforts are likely to be of limited benefit to bats, as sites would be subject to continual re-infestation. In the same vein, an effective bylaw prohibiting domestic cats (or requiring some form of management, such as limiting roaming) would need to be landscape-wide, and Hamilton City Council would need to initiate and enforce this measure.
34. I disagree with Dr Clarkson (paragraph 7.8) that there is any basis for requiring an offset/ compensation package due to residual effects on bats. Specific uncertainty arising from variance between predictions and performance of mitigation measures will be addressed through adaptive management.

CONCLUDING STATEMENT

35. I consider that the protection and enhancement of key corridors and habitat features proposed as part of this project will provide an important contribution to the landscape-wide habitat network that the Hamilton bat population relies on for its long-term viability. In my opinion, valuable habitats have been prioritised and retained, while residual effects from losses of lower value habitat is appropriately addressed through proposed mitigation measures. I consider that potential adverse ecological effects are addressed on-site, and proposed consent conditions ensure a low likelihood of adverse effects arising through ineffective implementation or failure of mitigation. Hence, in my view there is no basis for requiring any additional offset or compensation measures.

Dated this 1st day of May 2019



Sarah Flynn