

**BEFORE THE HEARING PANEL**

**IN THE MATTER** of the Resource Management Act 1991

**AND**

**IN THE MATTER** of Proposed Plan Change 5 to the Operative Hamilton  
City District Plan

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**REBUTTAL STATEMENT OF EVIDENCE OF MATTHEW JAMES BABER  
(ECOLOGY)**

**Dated 22 September 2022**

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**LACHLAN MULDOWNEY**

BARRISTER

**P** +64 7 834 4336 **M** +64 21 471 490

**Office** Panama Square, 14 Garden Place, Hamilton

**Postal** PO Box 9169, Waikato Mail Centre, Hamilton 3240

**[www.lachlanmuldowney.co.nz](http://www.lachlanmuldowney.co.nz)**

## **INTRODUCTION**

1. My full name is Matthew James Baber.
2. My qualifications and experience are as set out in paragraphs 2 to 6 of my primary statement of evidence dated 2 September 2022 (**primary evidence**).
3. I reconfirm that I have read and am familiar with the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2014 and I agree to comply with it. I confirm that the matters to be addressed in my rebuttal statement of evidence are within my area of expertise.

## **PURPOSE AND SCOPE OF EVIDENCE**

4. The purpose of this rebuttal statement of evidence, which I provide on behalf of Hamilton City Council (**HCC**) as the proponent of Plan Change 5 (**PC5**), is to respond to key matters raised in submitter evidence relating to the proposed effects management and the approach to offsets and compensation. I primarily respond to the evidence of Dr Ilse Corkery for the Director-General of Conservation (**DOC**), and also that of Moira Pryde and Dr Sarah Flynn (The Adare Company).

## **RESPONSE TO DR ISLE CORKERY FOR THE DEPARTMENT OF CONSERVATION**

5. In general terms it is my understanding that Dr Corkery considers:
  - a) 'Best-practice' biodiversity offsetting principles have not been followed, particularly regarding the effects management hierarchy and skipping biodiversity offsetting.
  - b) The proposed residual effects management is inadequate and the level of uncertainty around Net Gain outcomes is high.

- c) The use of the Biodiversity Compensation Model (**BCM**) is inappropriate, whereas applying the Biodiversity Offset Accounting Model (**BOAM**) would constitute 'best practice'.
6. I disagree with Dr Corkery's view that the effects management hierarchy has not been followed<sup>1</sup> for several reasons.
7. First, I consider all practicable measures to avoid effects have been exhausted, namely:
- a) The loss of all high value habitats and some moderate value habitats (including bat ecological values) within the Peacocke Structure Plan Area (**PSPA**) have been avoided through protection in perpetuity. The exception to this is approximately 3 ha of high value habitat that is not avoided because most of this is already authorised for removal under the consent granted for Amberfield.
  - b) Adverse effects on potential ecological corridors that are likely to become important habitat in the future have been avoided.
  - c) Further efforts to avoid habitat would require protection of the pasture and other non-riparian exotic vegetation that makes up the PSPA development area. It is unclear if Dr Corkery considers avoidance of the entire PSPA development area (excluding buildings) necessary to adequately adhere to the effects management hierarchy.
8. Second, adverse effects on ecological values that cannot be avoided have been further remedied or mitigated through the full suite of measures that would be expected as set out in the evidence of Mr Kessels and Dr Mueller. That said:

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<sup>1</sup> Statement of Evidence of Dr Isle Corkery dated 16 September 2022 at para 4.4.

- a) I agree with Dr Corkery's view that mitigation plantings should be undertaken well in advance of impacts to reduce the severity of effects to the extent possible.
  - b) Further to this, as I understand, Mr Kessels and Dr Mueller have taken on board comments raised by Ms Pryde to require a minimum buffer width of 50m in all instances and thus reduce the severity of effects on all protected habitat.
9. Third, while I considered offsetting before turning to compensation, I have ruled out 'claiming' or 'demonstrating' an offset as it is currently defined and interpreted in recent New Zealand guidance<sup>2</sup>, because:
- a) It is not possible to quantify impacts and predicted gains for any affected biodiversity values associated with this project with an adequate degree of certainty. For example, without years of radio-tracking data it is not possible with sufficient accuracy to:
    - i. Count/quantify the number of bats that are directly or indirectly impacted by the proposed land use change.
    - ii. Predictively quantify the increase in bats resulting from the proposed habitat and restoration actions at some point in the future, particularly given that proposed habitat restoration and enhancement sites outside the PSPA have yet to be determined.
  - b) To offset habitat loss in a like-for-like manner in accordance with best practice would require the replacement of the 488 ha of pasture habitat with pasture habitat and the replacement of 34 ha of non-

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<sup>2</sup> See para 15 below.

pasture vegetation with functionally the same type of non-pasture habitat. This would generate poor outcomes in my view relative to the compensation proposed.

- c) Moreover, to address her concerns in relation to offsetting and the effects management hierarchy, it would seem Dr Corkery is suggesting the need for quantitative field investigations through the PSPA (e.g. radiotracking of bats) and outside the PSPA once restoration and habitat locations have been confirmed. However, this would need to be clarified with Dr Corkery.
10. Finally, the compensation approach we have taken in my view constitutes best practice and is as close to offsetting as possible, particularly given the intent to undertake an integrated coordinated bat monitoring programme that can be used to evaluate if stated outcomes are achieved and to inform adaptive management responses if required.
11. In response to Dr Corkery's view that the proposed compensation is likely to be inadequate<sup>3</sup>, I disagree since:
- a) As set out in the Technical Ecology Report appended to the evidence of Mr Kessels, the proposed compensation package is intended to address residual effects associated with the loss of 488 ha of pasture habitat and 34 ha of mostly low stature exotic habitat. Respectively, these habitat types provide relatively low and moderate value habitat for bats compared to tall stature riparian river margin habitats or other more substantive linear features (this also holds true for copper skink).
  - b) The compensation package constitutes a significant trade-up in that residual effects on relatively low value exotic vegetation are

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<sup>3</sup> Statement of Evidence of Dr Isle Corkery dated 16 September 2022, para 14.24-14.32.

addressed through the restoration of, or improvements to, higher value habitats at significant scale, i.e.:

- i. 65 ha of high value native habitat restoration onsite (native revegetation and weed and mammalian pest control) within the PSPA; and
  - ii. 62 ha of high value habitat enhancement in the form of native enrichment planting and weed and mammalian pest control within the PSPA; and
  - iii. 190 ha of high value native habitat restoration (which would equate to 47.5 km of riparian planting) OR 700 ha of high value habitat enhancement (or a lesser combination of both) outside the PSPA.
12. Further to this, bats are a highly mobile species with large home ranges. The proposed 190 ha of native habitat restoration outside the PSPA is of a significant quantum to 'future proof' ecological connectivity across the wider landscape for the entire local bat population (as discussed in the supplementary evidence of Dr Mueller). This would be expected to protect and enhance ecological corridors between critical roosting sites within mature native forest outside the PSPA, and foraging habitat both outside and inside the PSPA. I consider this approach to optimise ecological outcomes for bats as it best combats the high risk of severance or partial severance of ecological connectivity for bats across the wider landscape arising from future development outside the PSPA.
13. The proposed residual effects management package can be reasonably expected to generate Net Gain outcomes for bats and other biodiversity values that would be adversely affected by the proposed land use change.

14. In response to Dr Corkery's view that the BCM is inappropriate and does not constitute best or even good practice I disagree, since:
- a) When biodiversity offsets cannot be claimed, the BCM is considerably more transparent and robust than viable alternative approaches, i.e. sole reliance on professional opinion, multipliers, or negotiated stakeholder agreements (i.e. horse-trading). Dr Corkery would need to clarify if she has concerns about the use of these alternative approaches.
  - b) Data limitations can be largely addressed in the BCM through conservative model inputs and multiple contingencies for uncertainty and risk to reduce the likelihood of predicting a 'false' net gain outcome.
  - c) In a perfect world, ecologists representing applicants, submitters and regulatory authorities would use the model to 'sense check' the proposal and reach agreement on the compensation package. This occurred for Te Ahu a Turanga: Manawatū Tararua Highway where both BOAMs and BCMs were used<sup>4</sup>. However, even when there remains fundamental disagreement or unwillingness by all parties to engage, the model is useful. It provides applicant ecologists with additional confidence that stated outcomes are likely to be achieved if predicted by the model. To my understanding the BCM is currently being applied by New Zealand ecology practitioners for this reason<sup>5</sup>.
  - d) As a general rule of thumb, when the BCM predicts a Net Gain outcome of >20% based on conservative model inputs, I consider

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<sup>4</sup> The type and quantum of proposed habitat restoration and enhancement measures was ultimately determined using BCMs, with the BOAM used to provide additional detail where warranted. Importantly, the approach was iterative and collaborative, and was considered by all involved to constitute "best practice".

<sup>5</sup> Based on my recent discussions with ecology practitioners, my understanding is that the BCM is currently being used on dozens of projects as a sense-check tool by a range of ecologists, including practitioners from major ecology consultancies in New Zealand, e.g. Tonkin & Taylor, Boffa Miskell, Ecology New Zealand, Aecom, RMA Ecology, Morphum and Bioresearchers.

that the proposed compensation package can reasonably be expected to generate Net Gains. If the model predicts <20% Net Gain outcomes, I recommend increasing the scale of proposed compensation to provide the necessary confidence that predicted outcomes are likely.

- e) In contrast to Dr Corkery, I do not consider it ‘best’ or even ‘good’ practice to require ‘mandatory’ use of the BOAM to demonstrate or ‘claim’ an offset at the plan change or resource consent stage. It is inappropriate to use any predictive model in this way as it places far more confidence in the model than is warranted. This was recognised in the Manawatū Tararua Highway decision of the Environment Court at para [173] which states:

The development of biodiversity offsetting and the use of models to achieve it is relatively recent. We appreciate the models' applicability as tools and that inputs can be at a very detailed level but there is no compulsion to use any particular model or for the model to do more than assist the Court in making a decision as to whether reasonable mitigation [sic] is being applied.

- f) Furthermore, the BOAM lacks adequate contingency for uncertainty and is less conservative than the BCM, as evidenced when direct comparisons have been made between the BOAM and BCM (for example, for the Manawatū Tararua Highway and the proposed Auckland Regional Landfill).<sup>6</sup>
- g) Similar concerns to those raised by Dr Corkery in her evidence were raised in relation to the application of BCMs for Auckland Regional Landfill, including by Dr Corkery who was also involved in that hearing<sup>7</sup>. I agree with the Commissioner’s Majority Decision which stated at [283]<sup>8</sup>:

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<sup>6</sup> Statement of Rebuttal Evidence of Dr Matthew Baber on behalf of Waste Management NZ Ltd, 3 June 2022 at [1.9].

<sup>7</sup> Council-level hearing Statement of Evidence of Dr Isle Corkery dated 22 October 2020.

<sup>8</sup> Commissioner’s Decision (Majority) at [283].



Some submitters (e.g. Forest & Bird) were critical of the qualitative approach taken by the applicant, highlighting that quantitative data could have been used instead if more assessments were carried out. ...[We] do not consider that further assessment work (e.g., radio-tracking for bats...) would have allowed for meaningful quantitative modelling that would further assist with decision-making.

[...]

While the quantitative results of such further assessment may give the impression of increased precision, survey and monitoring data for the fauna groups concerned are inherently variable and difficult to interpret. The applicant's approach to this uncertainty was to adopt a conservative approach towards assessing effects and applying a comprehensive effects management package that seeks to achieve a net gain, which provides more confidence in at least achieving no net loss.

We accept the applicant's approach.

15. I also disagree with several statements in Dr Corkery's evidence regarding the practical application of offsetting in New Zealand and the BCM, as follows:

- (a) I disagree that the offsetting principles from the exposure draft National Policy Statement for Indigenous Biodiversity (**NPS-IB**) should be included in PC5 as recommended by Dr Corkery (para 7.3). These principles and the associated definitions of 'Offsetting' and 'No Net Loss' in the NPS-IB were recently subject to consultation, attracting criticism for straying from international guidance (e.g. the Business and Biodiversity Offsets Programme (**BBOP**) guidance<sup>9</sup>). This is in contrast to Dr Corkery's statement in para 9.3 that the principles are 'consistent with the BBOP guidance'. Crucially, the exposure draft NPS-IB definitions now mandate the use of a quantitative, disaggregated 'like for like' loss gain calculation to demonstrate a biodiversity offset, which I consider unworkable in almost all instances.

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<sup>9</sup> Business and Biodiversity Offsets Programme (BBOP). 2009. Biodiversity Offset Design Handbook. BBOP, Washington, D.C.

- (b) In contrast to Dr Corkery’s view that there are “numerous examples” of offsets now being implemented in New Zealand<sup>10</sup>, only a small handful of projects have actually attempted to demonstrate offsetting, and only to a limited extent.<sup>11</sup> No projects of which I am aware have achieved project-wide offsetting, partly because offsetting as currently defined in national guidance<sup>12</sup> is not workable in most instances<sup>13</sup>.
- (c) I disagree that the BCM approach is novel<sup>14</sup>. Biodiversity offsetting is a developing field, and the BCM is consistent with recent international modelling approaches which also use qualitative data.<sup>15</sup> The approach is also consistent with international guidance. For example, the BBOP guidance describes the use of metrics based on surrogate data to demonstrate No Net Loss as a ‘practical’ and ‘workable’ approach.<sup>16</sup>
- (d) In para 14.16 Dr Corkery states that *‘in a recent application for resource consent (Te Kuha mine) the court did not accept it (the BCM approach) as part of evidence’*. This is inaccurate. In the knowledge that the BCMs were used and accepted by appellants (including DOC representatives) for the Manawatū Tararua Highway, the court directed all ecologists involved in the Te Kuha case to undertake additional caucusing in an attempt to reach agreement around model inputs. However, appellants elected not to engage, leaving the court with no choice but to abandon consideration of the model. The judge

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<sup>10</sup> Statement of evidence of Dr Isle Corkery, dated 16 September, at Para 10.10.

<sup>11</sup> For example Manawatū Tararua Highway and the proposed Auckland Regional Landfill in respect of calculating native tree loss versus gains.

<sup>12</sup> Including the National Policy Statement for Indigenous Biodiversity exposure draft June 2022.

<sup>13</sup> See para 15a above.

<sup>14</sup> Statement of evidence of Dr Isle Corkery, dated 16 September at Para 12.3.

<sup>15</sup> Recently developed international biodiversity models used to assist with determining residual effects management requirements also include the use of qualitative data that is underpinned by desktop and field investigations, e.g. the UK Biodiversity Metric Model.

<sup>16</sup> Business and Biodiversity Offsets Programme (BBOP). 2009. Biodiversity Offset Design Handbook. BBOP, Washington, D.C, page 27.

expressed frustration with parties that chose not to engage and considered this to be unhelpful to the court.

#### **RESPONSE TO MOIRA PRYDE FOR THE DEPARTMENT OF CONSERVATION**

16. I disagree with Ms Pryde's conclusion (para 9.6 of her evidence) that "the authors are over optimistic to believe that there will be 'no net loss' with this package." I have addressed the adequacy of the residual effects management package in para 7.13 above in response to Dr Ilse Corkery's evidence.

#### **RESPONSE TO DR SARAH FLYNN FOR THE ADARE COMPANY**

17. Regarding the proposed compensation approach for addressing residual effects, Dr Flynn states (para 23) that the limitation of this evaluation approach is that 'Instead of identifying a need to reduce uncertainty and time lag through planning mechanisms, the model simply increases the quantum of compensation required'. I consider this concern to be valid in principle. However:
- a) The BCM has been used to 'sense check' the type and quantum of compensation that could reasonably be expected to achieve Net Gain outcomes. In doing so, the model has not 'bypassed' mitigation approaches that would reduce the scale of compensation requirements. Indeed I support focusing on efforts to mitigate the severity of effect before defaulting to compensation (e.g. efforts to undertake planting well in advance of impacts).<sup>17</sup>.
  - b) The BCM already accounts for uncertainty and time lag, via corresponding adjustments to the compensation requirement. For example. the model assumes that for a given resource consent

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<sup>17</sup> See para 8a above.

application within the PSPA, planting would commence once a consent is granted and around the same time as commencement of construction activities (i.e. impacts). However, if a project includes plantings well in advance of impacts then this reduces the time-lag contingency in the model with a corresponding reduction in the scale of compensation requirements.

- c) I am unclear how Dr Flynn proposes that these matters would be addressed based solely on a 'per area' basis as proposed.<sup>18</sup>
18. I agree in part with Dr Flynn's statement at (para 28) that. "*Evaluated at a landscape scale, all enhancement work undertaken within the SBHAs is mitigation (not compensation), as its purpose is to reduce the severity of effects of the proposed urbanisation on bats*". I agree in part, however I note that:
- a) The proposed enhancement comprises both mitigation and compensation in that these efforts reduce the severity of effects at the point of impact (e.g. lighting or general disturbance effects associated with the proposed landuse where proximal to the SNAs); AND generate positive effects that do not reduce the severity of effects. The latter occurs through the provision of additional and better quality commuting, foraging and roosting habitat.
  - b) Irrespective of whether these effects are termed mitigation or 'compensation', the action required to address residual effects remains the same.
19. I agree with Dr Flynn's overall sentiment that the approach for determining mitigation/compensation requirements needs to be simplified, workable and fair and the avoidance of a piecemeal approach is needed to avoid

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<sup>18</sup> See para 28 and 29 of her evidence.

poor ecological outcomes. As stated in my primary evidence<sup>19</sup>, a landscape-scale approach is important in the PSPA, and further work is required to determine the location and nature of compensation actions to provide additional assurance that NNL/NG goals are realised.

**Matthew James Baber**

**22 September 2022**

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<sup>19</sup> Statement of evidence of Dr Matthew Baber dated 2 September, para 24.