

Before the Hamilton City Council Hearings Panel

Under the Resource Management Act 1991 (the **RMA**)

In the matter of a submission by the Waikato Regional Council (submitter reference 41) on Private Plan Change 2 – Te Awa Lakes

And

In the matter of Hamilton City Council Private Plan Change 2

**Statement of evidence of Blair Desmond Keenan for the Waikato
Regional Council**

Dated 11 November 2019

Summary of evidence

- 1 I am in general agreement with the other economists that participated in the expert caucusing on the matters of the commercial infeasibility of industrial development of the Te Awa Lakes site. I consider it likely that the presence of alligator weed could be expected to affect marketability of housing on the site, due to the costs of management and the constraints on activities. This does not appear to have been considered in the evidence of any other submitters. I note, however, that provided purchasers are fully aware of the implications of alligator weed, these costs will fall on the developer.
- 2 I consider that there are risks of significant external costs that may arise as a result of the development. I concur with the evidence that the inclusion of residential property at Te Awa Lakes may result in costs to adjacent industrial sites due to reverse sensitivity, although this is difficult to quantify, especially if appropriate mitigations are put in place.
- 3 The main external cost that remains is the potential increased risk that alligator weed escapes from the site and results in substantial increases in management costs elsewhere, and potential loss of agricultural and horticultural production in the case of terrestrial invasion.

Qualifications and Experience

- 4 My full name is Blair Desmond Keenan. I am the Principal Economist in the Social and Economic Science team in the Science and Strategy Directorate at Waikato Regional Council (**WRC**).
- 5 I have been employed by WRC since 2010 in roles including Environmental Economist, focusing on the economics of environmental and resource management issues, and since 2015 as Principal Economist, providing information and advice across the breadth of WRC interests and activities to the council, executive, staff, and external parties. In my current role, I also provide advice and support to Te Waka (the Waikato Economic Development Agency).
- 6 I hold a Bachelor of Commerce degree obtained from the University of Otago in 1993 and a Master of Science degree in Applied Environmental Economics from the University of London, obtained in 2003. I have 26 years' experience in the fields of

economics, research and policy, including roles in the finance sector, with industry organisations, and with both central and local government.

Code of Conduct

- 7 While this is a Council hearing and acknowledging that I am an employee of WRC, I have read the Environment Court's Code of Conduct for Expert Witnesses (2014) and I agree to comply with it (particularly Section 7). My qualifications as an expert are set out above. I confirm that the issues addressed in this brief of evidence are within my areas of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

Scope of Evidence

- 8 My evidence will address the following:
- a. The feasibility of development of the site;
 - b. External costs associated with residential development;
- 9 In forming my opinions, I have relied on the expert evidence of the relevant expert witnesses and legal submissions. Where relevant, I have made a reference to specific submissions where these identify matters that I consider require specific mention.
- 10 I participated in the joint witness caucusing on economic matters on 2-3 October. While I am in general agreement with the other economists in attendance, I note that the economic implications of alligator weed were not considered.

Feasibility of development

- 11 One of the fundamental justifications for the proposed plan change is that industrial development of the site is not commercially feasible, and therefore the site would remain undeveloped if it remains zoned for industrial uses. I consider that the reports presented to date collectively provide sufficient evidence that industrial development of the site does not appear to be commercially feasible (Essentia Consulting, 2019 and Anderson, 2019). Moreover, the reports presented by Dr Fairgray of Market Economics (Fairgray and Fairgray 2019a, 2019b) are persuasive that the loss of this land for future industrial uses is not likely to limit industrial growth in the Region.

- 12 The corollary of this argument is that residential development of the site, with the associated higher profit margins, *is* feasible. While some evidence has been presented as to the attractiveness of the site for residential development, it is not clear that this has included the implications of the alligator weed (*Alternanthera philoxeroides*) infestation of the site. In particular, it is unclear whether the commercial feasibility of residential development of the site may be affected by the requirements to manage alligator weed, and the associated costs.
- 13 Assuming the disclosure of ongoing management requirements – and associated costs – to potential buyers, it seems likely that some discount to market prices could be expected. While the report by Peter Russell (Russell, 2019) canvasses options for allocating the costs of weed management, it is noted that a biosecurity targeted rate is currently used to fund WRC weed control activities. Notwithstanding future decisions on funding these activities have yet to be made, this suggests that some level of ongoing costs may fall on property owners, who may then adjust the price they are willing to pay accordingly.
- 14 Mr Embling¹ confirms that there was no agreement as part of the joint witness caucusing on the method of funding the ongoing costs of alligator weed management.
- 15 Appendix 3 of Mr Embling's evidence indicates the costs to manage alligator weed could be in the range of \$240-\$360 per annum per property. Assuming this cost is incurred over a 15-year period, and using a six percent discount rate, this would equate to a net present value of between \$2,570 and \$3,850 per property. If ongoing management is required for a longer period, the net present value of costs will be commensurately higher (for example, if management actions have to continue for 20 years, a net present value of between \$3,000 and \$4,500 would be expected). These values do seem relatively small compared to the likely value of properties, and unlikely to affect the commercial viability of Te Awa Lakes housing *per se*. It does not, however, take account of the non-market values that drive demand.
- 16 While there exists non-market valuation literature on the effects of invasive weeds on property prices, none of the studies I have found have a sufficiently similar context to infer price effects in the case of residential development of Te Awa Lakes. It is understood that alligator weed exists on some residential properties in Rototuna, and

¹ EIC Darion Embling, 12 November 2019, paragraph 56.

this may provide a useful comparator, but no study of this has been undertaken as far as I am aware.

- 17 In any case, if residential development proved unprofitable as a result of the effects of alligator weed on property prices, these financial costs would be borne by the developer.

External costs of residential development

- 18 "External costs" are costs that are generated by one party, but are incurred by a different party. The arguments put forward about reverse sensitivity in relation to residential development at Te Awa Lakes (for example, in the submissions from Fonterra Limited and Ports of Auckland Limited) are a good example of this. Fonterra and Ports of Auckland Limited both argue that the inclusion of housing in the Te Awa Lakes development will constrain their choices in respect of future activities. I concur that such costs are likely, although the extent of them is difficult to gauge.
- 19 The increased risk of alligator weed incursions from the site is potentially another significant external cost. My interpretation of the evidence provided by Mr Embling is that the risk of such an incursion is expected to increase under residential development, since, with hundreds of individual properties and owners, there will be many more possible vectors for the transmission of the weed.
- 20 Again, quantifying the costs of alligator weed incursions is not straightforward. WRC is in the process of commissioning work on this to support decisions on regional pest management activities, but results of this work are not currently available.
- 21 At the least, a spread of alligator weed offsite would result in significant additional costs of management. These costs would be borne either by property-owners to whose properties the weed spreads, or general ratepayers – that is the costs would be external to property owners of the Te Awa Lakes development.
- 22 The costs of control are unlikely to be linear if the spatial range of alligator weed spreads. A research note from Manaaki Whenua Landcare Research (Fowler, 2017) notes that alligator weed control in 'the north' (it is much more established in the Northland and Auckland Regions) was estimated to be costing land managers \$6.47 million per year.

- 23 The risk of higher weed management costs in future is only one aspect of the potential damage of alligator weed. It has the potential to invade pasture and horticulture land, with consequent effects on productivity and costs for affected sectors. WRC (2014) estimates that an average loss of 15 percent of productivity could be expected in the case of alligator weed infestation (see Appendix 5.2). These assumptions may, in some cases, be conservative with some studies indicating reduced yields of 20 percent in vegetable crops (Shen et al., 2005) and 45 percent in heavily infested kumara crops (Champion, 2005).
- 24 WRC (2014) also notes that around 1.6 million hectares of land in the Region is potentially capable of supporting alligator weed. While this should not be taken as indicative of the area at risk from the Te Awa Lakes infestation, it does indicate why WRC considers the spread of alligator weed to be such a serious issue.
- 25 However, there is little up to date information about the possible rate of spread to productive land (that is, how much land may be vulnerable) and the expected value of these costs cannot be quantified at this time.

References

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