

IN THE MATTER of the Resource Management Act 1991

AND

IN THE MATTER of Proposed Private Plan Change 2 to
the Hamilton City Operative District
Plan: Te Awa Lakes Private Plan
Change

**STATEMENT OF REPLY EVIDENCE OF JAMES DOUGLAS MARSHALL FAIRGRAY FOR THE
APPLICANT
(ECONOMICS)
25 NOVEMBER 2019**

1. INTRODUCTION

- 1.1 My full name is James Douglas Marshall Fairgray. I have the qualifications and experience set out in section 2 of my evidence

Code of Conduct

- 1.2 I reconfirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014 and to the extent that I am giving expert evidence, I have complied with it in preparing this evidence. I confirm that the issues addressed in this evidence are within my area of expertise and I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in my evidence.

2. SCOPE OF EVIDENCE

- 2.1 I have been asked to respond to the expert economic evidence of the following submitters on Proposed Plan Change 2 to the Operative Hamilton City District Plan: Te Awa Lakes (PPC2):

Mike Copeland for Fonterra Ltd.

Blair Keenan for Waikato Regional Council.

- 2.2 I have also examined the corporate evidence of Brigid Buckley for Fonterra, on whom Mr Copeland relies for a number of his conclusions.

3. RESPONSE TO SUBMITTER EVIDENCE

Fonterra

Mr Copeland

- 3.1 Mr Copeland raises a number of queries with my economic analysis. Many were discussed generally during the expert witness caucusing on economic and strategic issues, and I have addressed them in my primary evidence. However, to the extent that he raises new queries or information in his statement of evidence, I respond to them below by reference to the relevant paragraph number of his statement..

- 3.2 For the avoidance of doubt, if I do not respond specifically to a particular paragraph in Mr Copeland's statement that does not mean I accept its contents.

Industrial Capacity

- 3.3 Mr Copeland offers some broad criticisms of the approach I used to review the zoned industrial capacity in the sub-region. He suggests that my assessment may overstate the sufficiency of Hamilton's industrial land supply, and considers that my calculations rely on historical relationships between employment and land area, which may understate future industrial land requirements, including provision for additional types of activity than allowed for. Mr Copeland cites as an example of this the POAL inland port.
- 3.4 However, as I have described in my statement, for my assessment I took a deliberately conservative view of industrial land sufficiency. My approach is accordingly more likely to understate the level of intensification of the existing industrial estate, and therefore overstate the requirement for vacant industrial land. I allowed for quite minor increases in employment intensity on existing land and small decreases in floorspace per person employed (combined, 0.2% to 0.4% pa), resulting in a relatively low increase in intensity across the existing industrial estate of between 6% and 13% over a 30-year period. This rate is about two-fifths the increase in intensity observed for Hamilton's industrial estate. I consider that my estimates of the level of industrial demand likely to be met within the existing industrial estate are conservative.
- 3.5 My analysis is quite general, and I have recognised that industrial zoning covers a wide range of activities. The Waikato is a well established and diverse economy, and includes 92% of all the different types of business activity identified by SNZ in their ANZSIC classification, and 86% of all manufacturing activities¹. Recognising this diversity, I have covered the broader extent of the industrial sector, rather than focus on specific activities. I have examined future needs on the basis that business growth in an established economy like Hamilton-Waikato is likely to be predominantly incremental, with additional space required primarily for the established sectors to grow, as distinct from the emergence of new activities or sectors which are unexpected. I note that the POAL inland

¹ SNZ 2019

port is not a new type of activity for Hamilton, with the Ruakura inland port also a feature of the industrial/transport sector activity within Hamilton.

- 3.6 Mr Copeland does not offer his own alternative assessment of industrial land requirements, to provide a basis for him to claim that my assessment over-states or understates future requirements for industrial land. He does not identify specific land requirements for Fonterra. He has not produced any alternative estimates of industrial land demand or supply. Nor has he offered an alternative view on the levels or patterns of industrial growth which he would need in order to support the conclusions he has drawn.
- 3.7 In my view, a number of circumstances would need to occur for Mr Copeland's assertions of a potential future shortage in industrial land were to hold true. One circumstance would require that all future industrial demand would need to be met through vacant land supply, at a relatively low level of employment intensity, and with an increase in the share of employment opting to establish in an industrial location. In particular, it would require that no further employment growth would occur in the existing industrial estate. I consider this is unlikely, as it directly contrasts the observed pattern where employment intensity increases over time not just in Hamilton City but also in other economies. A common development pattern on industrial land is that different portions of large industrial sites are developed through time. This is also clearly observed through the empirical data on Hamilton CCC's where multiple certificates are issued for the same sites through time. Mr Copeland's assertions also contrast with the detailed modelling I have undertaken in assessing the Hamilton and Future Proof industrial land situation.
- 3.8 Alternatively, if Mr Copeland's hypothesis were to apply, there would need to be considerably higher rates of growth in industrial employment through time. I consider this is unlikely as it would also imply structural shifts in Hamilton's economy. I do not consider that Mr Copeland has provided a basis for such changes or their magnitude. I note that this scenario would also require substantial increase in the Hamilton City workforce, with consequent demand for additional housing.

Reverse Sensitivity

- 3.9 Mr Copeland contends that there has not been adequate consideration of reverse sensitivity effects, and that these may impact on the opportunities for Fonterra to expand and further develop their Te Rapa site. He relies on the evidence of Ms Buckley.
- 3.10 In my view, reverse sensitivity effects are an important matter in (urban) planning. In most instances, these arise from effects on the living environment (such as noise, lighting, odour). The assessment of such direct effects is the domain of the relevant technical experts. Economic evidence then relies on that technical expertise as whether such effects would impact on key economic processes, including land use decisions, investment and location decisions, levels of business output and other matters generally describable as economic activity.
- 3.11 I consider that if the residential or other urban uses on the PPC2 site were to constrain existing activities of the Fonterra Te Rapa plant, or were to limit the opportunity for Fonterra to expand on and/or adjacent to the existing site, then that would constitute an adverse effect on the Hamilton and Waikato economy. The Fonterra plant, and dairy processing activity generally, are important within the Hamilton City and Waikato region economy.
- 3.12 For PPC2, the key issues in that regard are the extent (scale, location) of such effects and whether they are material in terms of impact on Fonterra, and the degree to which effects from the PPC2 site would be over and above the same or similar reverse sensitivity effects which would arise in any case (without PPC2) from the presence of residential or other development occurring on other land in the locality.
- 3.13 Mr Copeland raises the prospect (para 5.1) that if reverse sensitivity effects caused the Te Rapa plant to close, downsize or be unable to expand, then capacity would need to be developed elsewhere. While such effects would follow as a matter of logic (unless Fonterra's milk supply were to reduce), he offers no estimate of what such costs might be, nor of the extent of reverse sensitivity effects on the Te Rapa plant. He does not go beyond stating (para 4.3(a)) that "*..PPC2 will give rise to reverse sensitivity effects...*" and he relies on the evidence of Ms Buckley and Mr Chrisp.

- 3.14 On that basis, Mr Copeland concludes that (para 5.5) “*reverse sensitivity effects ...on land users’ existing and future operations are likely to have a significant impact on the Hamilton and Waikato Region from an economic perspective.*”
- 3.15 My concern is that in the absence of any assessment of the extent or likelihood of such reverse sensitivity effects, Mr Copeland is not in a position to make such a claim. He has not established that reverse sensitivity effects “*...are likely...*” or how large they may be, or linked those to PPC2.
- 3.16 Mr Copeland has not considered whether any reverse sensitivity effects of PPC2 residential development would be greater than those of other (current and future) residential land use that is located within proximity to the Fonterra site, including the existing residential lifestyle properties east of the PPC2 site on the opposite side of the Waikato River, as well as future provision for residential growth in the HT1 area east of the Waikato river.
- 3.17 I understand that the technical expert evidence has been provided from Mr Bell-Booth and a report from Mr Hunt (noise), from Mr Mckensey (lighting) and Mr Pearce (air quality) which concludes that reverse sensitivity effects on Fonterra from PPC2 will not occur or not be of any level to be of concern. I have also read the statement of Mr Olliver, which sets out provisions which have been added into the plan change to provide for reverse sensitivity effects.
- 3.18 If those provisions combined with technical expert advice do give adequate protection for Fonterra and other business activities against reverse sensitivity effects from PPC2, then there would not be adverse economic effects from reverse sensitivity.

Residential

- 3.19 In relation to the residential component of PPC2, Mr Copeland states that there would be additional community-wide economic costs, in terms of additional infrastructure costs (para 4.3(b)), extra infrastructure operational costs because residential growth would be “more dispersed”, higher funding costs for infrastructure because growth in other locations would be slower, and additional costs due to the “comparative isolation” of Te Awa Lakes (para 4.3(e)).

- 3.20 In my view, Mr Copeland's conclusions do not consider the full effects of additional housing capacity. For a given level of household growth, at the high level additional capacity will typically mean some growth is attracted to the new capacity, and development of other capacity is correspondingly slower. However, as with any provision for urban growth, there is a mix of effects arising from the timing and location of growth. For my assessment, I considered the implications of residential development in that location, in relation to other residential activity and future capacity for growth. The PPC2 site falls within the future urban area of Hamilton City, with future residential growth planned for the adjacent HT1 area. It is not isolated, especially in the medium-long term.
- 3.21 I note that there are benefits from provision of housing capacity *per se*, including in relation to provision for affordable dwellings. Mr Copeland does not acknowledge this.
- 3.22 Moreover, in my view the proposed development should be considered within the context of lower Waikato District growth in the short to medium-term. PPC2 would encourage the consolidation of growth around the SH1 corridor, which is consistent with the objectives of the Waikato PDP. Moreover, it would be likely to provide higher density, lower priced dwellings relative to the predominance of lifestyle properties (Country Living Zone) in southern Waikato District's capacity in this area.
- 3.23 In summary, I do not agree with Mr Copeland's focus only on potential additional costs from residential development in that location.

Agglomeration Effects

- 3.24 Mr Copeland claims (para 8.9) that my assessment of the effects on agglomeration economies considers only the advantages of different locations to *new* industrial activities, rather than the advantages of existing operations being able to expand onto adjacent sites and use their existing investment (sunk costs, e.g. plant) that cannot be transferred to other locations.
- 3.25 That is not the case. In my assessment of agglomeration effects, I have considered carefully how agglomeration benefits arise, in particular the importance of location and geographic concentration of economic activity. My assessment is not limited to the multi-criteria analysis.

- 3.26 Importantly, it identified opportunity for further industrial development to occur in the same general location – Te Rapa North-Horotiu – as well as in other established locations including Ruakura, and I concluded that development in those locations would continue to enhance agglomeration benefits arising from Hamilton’s growth. Mr Copleand does not argue these points, and relies on the view that reverse sensitivity effects would constrain the activities of both Fonterra and Ports of Auckland.
- 3.27 I consider my modelling and analysis is appropriate and considers the expansion of existing industrial activities as well as new activities within industrial nodes.

Ms Buckley

- 3.28 Ms Buckley presents corporate evidence on behalf of Fonterra. From an economic perspective, corporate evidence is relevant because it can indicate the reasoning and intent behind a business’ activity, which can be a key influence on the commercial processes which drive substantial parts of a district or regional economy.
- 3.29 Ms Buckley addresses Fonterra’s role within the regional economy, and focuses on Fonterra’s approach to managing reverse sensitivity effects, and her experience with such effects.
- 3.30 She concludes (para 2.2) that “*..PPC2 will result in significant adverse reverse sensitivity effects..*” on the Te Rapa Dairy Factory.
- 3.31 She further states (para 2.3, para 7.1) that PPC2 “*..could result in limited new or re-investment being undertaken on the site.*”
- 3.32 As I have set out above, I consider that reverse sensitivity effects are important, and can adversely impact on economic activity. Also as set out above, I consider that such impacts depend on the likelihood and extent of reverse sensitivity effects occurring.
- 3.33 Ms Buckley has focussed on the potential for reverse sensitivity effects to arise, and she relates this potential with the number of people or households in proximity to industrial plants. On that basis, she considers that provision for 1,100 or so households in PPC2 will give rise to considerable potential for reverse sensitivity effects to arise, primarily through complaints by residents. She notes that often complaints arise from the perception of effects, as distinct from actual effects.

- 3.34 Ms Buckley states that Fonterra's existing investment in the Te Rapa site was made on the understanding that it was surrounded by industrial zoned land that does not provide for the establishment of sensitive land uses, and that Fonterra has invested substantially within the district planning processes to gain certainty over future operations, which is reflected in Fonterra's investment in the Te Rapa plant since 2013.
- 3.35 However, I also understand that in 2005, a strategic agreement was reached between Hamilton City and the Waikato District to incorporate HT1, the land area to the east of the Fonterra site, into Hamilton City by 2045, as an area of future urban growth. That information would have been available to Fonterra.
- 3.36 Ms Buckley identifies that "*..Fonterra has experienced an increase in complaints about its lawful operations.*" (p7.2), and identifies that there are staff and other costs from dealing with complaints.
- 3.37 A core question is whether such complaints will translate into future decisions by Fonterra to alter their decisions on investment, operations and expansion, such that activity which would otherwise have been directed at the Te Rapa site would be directed to (an)other Fonterra sites, or not be undertaken at all. If activity is re-directed to other locations, that may mean a higher cost / less efficient outcome for Fonterra overall, in which case there would be an economic cost. If activity were directed away from Hamilton, then there would be an economic cost since the Hamilton economy would be smaller than it would have been otherwise.
- 3.38 Any adverse economic effects due to PPC2 would depend on there being complaints/submissions or other actions from residents in that location who consider they are or would be adversely affected by the Te Rapa plant, and those complaints/submissions resulting in Fonterra being unable to pursue their desired course of action with the Te Rapa plant. It appears that the technical expert evidence in this case, combined with the controls outlined by Mr Olliver, indicates it is unlikely there would be a basis for adverse effects being caused by Fonterra on the Te Awa Lakes land. In that case, it would be unlikely that Fonterra's operations would be disrupted.
- 3.39 In addition, if a precautionary approach to reverse sensitivity effects were to unnecessarily preclude otherwise efficient urban development, then that would also

represent an economic cost, with less efficient use of the land resource and less efficient/less compact urban form likely to result.

Waikato Regional Council

Mr Keenan

- 3.40 Mr Keenan participated in the expert witness caucusing on economic and strategic issues, mostly regarding the impact of any feasibility issues on industrial land supply and the economic effects of the proposal. I have already responded to those points in my primary evidence. However, to the extent that his evidence contains any new material, I respond to them below with the same riders as for Mr Copeland (above).
- 3.41 Mr Keenan has identified the presence of internal and external costs associated with the proposed development on the PPC2 site as a result of the presence of alligator weed. He considers these were not taken into account during the joint witness caucusing on economic matters.
- 3.42 The internal costs relate to the cost of management on the site during the construction stage as well as the ongoing costs of weed control and eradication. These costs are likely to be internalised to the developer or property purchasers and therefore factored into the cost of each property.
- 3.43 Mr Keenan calculates, from Mr Embling's evidence, that these equate to around \$240 to \$360 per annum per property. This equates to a net present value of between \$2,570 to \$4,500 per dwelling for a 15 to 20 year period. I agree with Mr Keenan where he states these values seem relatively small compared to the likely value of properties and are therefore unlikely to affect their feasibility.
- 3.44 Mr Keenan also states there are potential external economic costs relative to the presence of alligator weed. These may occur if alligator weed is not eradicated as hoped and is spread to other locations as a result of increased activity on the PPC2 site from the proposed development. Mr Keenan cites studies where horticultural productivity decreases by an average of 15% (but up to 45%) as a result of alligator weed infestation.
- 3.45 I do not have any alternative estimates of the cost of alligator weed external costs. It is also not something that can reliably be assessed in a way that would likely be useful to

the Hearing Panel, as it depends on eradication not being successful, then trying to calculate whether any spread off-site were attributable to Te Awa Lakes and not from some other source in the district or region, then trying to calculate any differential from that being a possibility in any event from non-PPC2 activities (if the plan change did not proceed), such as during the site remediation, or re-development for other activities.

4. CONCLUSION

- 4.1 Having reviewed the evidence of Mr Copeland for Fonterra and Mr Keenan for Waikato Regional Council, I remain of the view that PPC2 is generally consistent with the growth direction envisaged for the Hamilton-FPP area (and Metro Plan area), from an urban economic perspective.

J D M Fairgray

25 November 2019

