

Before an Independent Commissioner  
Appointed by the Selwyn District Council

Under the Resource Management Act 1991

In the matter of a hearing on Plan Change 79 to the Operative Selwyn District  
Plan

Birchs Village Limited

**Proponent**

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**Summary Statement of Paul Michael Farrelly**

27 April 2023

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**anderson  
lloyd.**

### **Summary of evidence**

- 1 My name is Paul Michael Farrelly.
- 2 I prepared a statement of evidence dated 17 April 2023 in relation to Greenhouse Gas Emissions. My qualifications and experience are set out in that statement of evidence.
- 3 I repeat the confirmation given in that statement that I have read and agree to comply with the Code of Conduct for Expert Witnesses in the Environment Court.
- 4 My role in relation to the Application was to review the proposed development from a Greenhouse Gas emissions perspective.

### **Summary**

- 5 When considering the GHG impacts of a potential land use change for housing, it is important to evaluate both the emissions from the existing land use and the anticipated emissions arising from the new land use compared to other potential developments.
- 6 GHG emissions are currently occurring on the proposed development land, because of the livestock (sheep) that is grazed on the land.
- 7 These emissions occur primarily from methane, which is known to have a much greater impact on global warming than carbon dioxide.
- 8 The removal of livestock from the land would support a reduction in GHG emissions compared to an alternative potential development site that has a different current land use (such as a golf course).
- 9 PC79 will result in new emissions from the construction and operation of dwellings, and from travel undertaken by residents. However, these emissions would occur elsewhere in New Zealand if this development does not proceed, as these people would simply live elsewhere.
- 10 Based on my understanding, the typical buyer targeted in this development, and indeed much of the market for the Selwyn district is a buyer who wishes to purchase a relatively affordable, modern property, relatively close to a major metropolitan centre.
- 11 Assuming that property affordability is a key consideration for these prospective buyers, I think it is not unreasonable to assume that if a prospective buyer in Prebbleton is unable to find a suitable affordable property, they are likely to buy a similar property in a more affordable area, which (given the relative value of land) logically means buying further out from Christchurch. So, I believe there is a significant risk in Greenhouse Gas emissions increases if there is not adequate

availability of affordable property in greenfield locations close to Christchurch, such as Prebbleton.

- 12 PC79 proposes a minimum density of 15 households per hectare. This is relatively high for a Greenfield site and is advantageous from a GHG perspective in comparison to lower density developments because the infrastructural emissions are lower on a per resident basis.
- 13 The location in Prebbleton provides some climate resilience as the site is not located in the floodplain of any major rivers or streams or near to coastlines.
- 14 Over a 90-year life cycle, energy usage is currently the most significant source of emissions that occurs in residential developments in New Zealand, followed by the embodied carbon of building materials.
- 15 Stand alone or detached housing emissions are lower on a per m<sup>2</sup> basis<sup>1</sup> than the emissions of multi-storey apartments. This is because high embodied carbon materials (concrete and steel) are typically used to build multi-storey apartments, compared to stand alone houses (like those envisaged in PC79), that are primarily constructed of timber.
- 16 Lifetime energy usage emissions from stand-alone homes can be minimised through the specification of energy efficient homes, the elimination of natural gas/LPG in developments, and encouraging a high uptake of solar PV panels.
- 17 The potential for solar PV uptake is much greater on stand-alone homes (compared to multi-storey apartments or medium density multi-level homes) due to the much greater ratio of usable roof area to floor area.
- 18 The PC79 site is located adjacent to the key bus route between Christchurch and Lincoln, and there are 2 bus routes (80 and 81) that currently travel along this route.
- 19 The Greater Christchurch transport plan<sup>2</sup>, has identified that the preferred future public transport option for Christchurch is a bus network, with a “Turn Up and Go” service to be developed along a route between Hornby and Belfast, that is well integrated to existing core bus routes, including those that run along Birchs Road. As such, PC79 is extremely well located in respect of public transport provision compared to other Greenfield sites in the region.

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<sup>1</sup> <https://iopscience.iop.org/article/10.1088/1755-1315/588/2/022064/pdf>

<sup>2</sup> <https://www.greaterchristchurch.org.nz/huihui-mai/transport/>

- 20 The PC79 site is also ideally located for cycling, with excellent off-road cycling access to both Prebbleton (approx. 2km) and Lincoln (approx. 7km) provided by way of the Little River Rail Trail cycleway that runs from Christchurch to Little River. The section is flat, smooth, and well maintained.
- 21 The GHG impact of commuting trips is also expected to reduce as uptake of electric vehicles (EVs) increases and as working from home continues to be well-utilised by workers that have longer commutes.

#### **Response to submissions**

- 22 I have read the statement of Serena Orr, dated 21 April 2023, on behalf of The Canterbury Regional Council.
- 23 Ms. Orr states that *"In my opinion, Policy 1 of the NPS-UD is intended to be read as "planning decisions contribute to well-functioning urban environments, ..., that as a minimum, support reductions in greenhouse gas emissions". It does not state the conditions of how these greenhouse gas emissions would be measured but it is my view that this would be interpreted holistically and from the baseline of its existing zoning, not comparatively to other greenfield developments throughout Canterbury of similar or lower density."*
- 24 I disagree with this interpretation. It is difficult to envisage a proposed new housing development resulting in a reduction in greenhouse gases compared to its baseline existing zoning. However, I do agree that the emissions from the existing land use do need to be considered and I have done this.
- 25 The language of Policy 1 e) of the NPSUD refers to the word "support" in terms of reductions in greenhouse gas emissions. It does not say, for example, that greenhouse gas emissions are to be avoided or that a reduction must be demonstrated.
- 26 I also note the comments of the Commissioner for Plan Change 68 – a recent plan change in Prebbleton - who stated, in point 4.133: *In summary I have concluded the issue of greenhouse gas emissions does not operate to prevent the development the subject of PC68. In my view the issue needs to be seen in the context of the fact that NPS-UD clearly contemplates the need for development in greenfield areas. Whilst there will be an increase in greenhouse gas emissions by reason of the development associated with PC68, I note that the relevant policy in the NPS-UD (Policy 1(e)) speaks of supporting the reduction of greenhouse gases.*
- 27 To that end, I remain of the view that when considering GHG emissions in the context of Greenfields development that it is important to evaluate both the emissions from the existing land use and the anticipated emissions arising from the new land use compared to other potential developments.

- 28 I have also read the statement from Benjamin Love. Mr Love's statement is focussed on the topic of suburban sprawl and low density living in general, which he is opposed to.
- 29 Mr Love does not define what he understands low density living to be, nor does he make any points specific to PC79. Rather he is opposed to any growth for the Christchurch metropolitan area outside of intensification of existing urban areas.

### **Conclusion**

- 30 Accounting for the points above, I consider that, on balance, the PC79 development supports a reduction in GHG emissions, relative to other greenfield development opportunities available in the greater Canterbury region.

**Paul Michael Farrelly**

Dated this 27th day of April 2023