In Support of: Submission #4 Darryl Longstaffe
25 Elmslie Rd, Pinehaven, Upper Hutt

Regarding: Proposed UHCC Hazards Maps

I wish to speak to my submission challenging the proposed UHCC Hazards Maps for my property, and for the entire Pinehaven / Silverstream catchment by nature of extrapolation.

To qualify the evidence, and drawings submitted with this document, I would like The commissioner to take on board the following;

- My property has been professionally surveyed by Wigley & Roberts Ltd (NZIS) with boundaries, spot levels, stream bed & stream banks identified along with recognised datums. This company have no vested interest in the outcome of this hearing.

- I am an architectural draughtsman with over 20 yrs experience in producing site plans, cross sections, etc to resource/building consent standards.

- I have been involved in the Pinehaven FMP for over 4 years and have studied all expert evidence (where made available), Council documents, and submissions on this matter. I have attended most (if not all) hearings relevant to this topic, so consider myself to be familiar with the subject.

If the public are to assume that these maps are based on GWRC Flood Maps (which UHCC never acknowledged before submissions closed), then they have serious flaws and assumptions that need to be addressed which I will elaborate on shortly. The data and assumptions used in the flood modelling software to generate these maps has never been made public so it cannot be independently verified. The auditor was never given the scope in the Terms of Reference to fully investigate the flood modelling assumptions and data.

The main points that I challenge the proposed UHCC Hazards Maps on are the following;

1. This point is **KEY**: the peak hydrograph (GWRC Pinehaven Stream, Floodplain Management Plan Vol 1 (6 Sept 2016), **Appendix E, Pinehaven Hydrology Summary** for the Pinehaven sub-catchments describes the true amount of runoff expected in a 1:100 year flood event. The volume of water shown in this table is far less than what the maps show - ie the maps are showing a greater flood extent and volume than they should. This is GWRC data that contradicts its own maps. Quoting Michael Laws from the BECA audit 13-Jul-2015 (page 27) on the GWRC Q100 Flood Hazard *Maps "the way the flood extent and hazard maps are presented obscures the components that have been used to derive the extents"*

2. **Modelling resolution:** The five metre grid used in the mapping and modelling is too course for the complex nature of the upper catchment where the contours and levels can change quite dramatically within a short distance, thus affecting the accuracy of the maps. This is quite different to the lower catchment where it is either relatively flat or has gentle slopes.

3. **Contours/Levels incorrect:** The path of the stream running across my property has not been correctly mapped to the true contours on my property (which has been professionally surveyed), and therefore the extent and path of the flood hazard is incorrect (refer attached drawings 01, 02). This will probably be incorrect for other properties in the area. My neighbour has spot levels from GWRC that are also incorrect to site topography. A document from GWRC in relation to their 1:100yr water levels for my property mentions students doing a visual survey of properties to "estimate" floor levels. Once again this is wrong for my property and probably many others.

4. **Water Volume:** The volume of water defined by the peak hydrograph for the sub-catchments upstream from my property shows, once drawn in cross section, that the majority of the water is contained within the stream banks. Any overflow from the channel is well clear of any floor levels of my house, which is not taken into account on the maps, rather the opposite is shown with the flood waters shown going through the house. This is erroneous and misleading, for example to insurers who assume that the house is surrounded by, or under water. Consequently this will have an adverse effect on insurance premiums and property value. Council are also planning on attaching these maps to property LIMS which once again affects property values and insurance with the maps giving no clear information on the nature of the hazard. I strongly oppose this on this basis.

5. **Water velocity:** If the maps depict a flood volume generated by an indicative velocity of 1m3/sec then that would be unrealistic for the upper catchment where there is rapid change in contours and the water would flow faster. I have witnessed on numerous occasions our stream running at over 2m3/sec during and after a prolonged or heavy rainfall. This would most certainly be the case in a 1:100yr event (perhaps even higher). By falsely limiting the modelling to a low velocity it allows the water to “spread” on the map, thus distorting the extent of flood hazard.

6. **Ponding:** There is no definition attached to this term on the maps – but usually taken to mean standing water with little or no velocity. Again misleading and unlikely given the nature of upper catchment topography. My property has a cross fall of approximately three meters which makes it hard for 'normal' water to pond and therefore should not be a true hazard (especially once combined with a low velocity), and should not be described as such. The ponding area shown on the proposed maps distorts the true extent of the hazard. The Building Code requires all new dwellings to achieve floor levels to a minimum height above ground level - this in itself negates 'ponding' becoming a factor or hazard.

7. **Levels:** There are no depth indications on any of the maps - meaning water shown can be as shallow as 1mm deep! Surely then all the maps should be shaded completely blue if this was to be consistently applied across the entire region. Once again a false hazard that distorts the maps. This is also a problem for future development in that extra runoff can be hidden within the maps, as the extent of flood hazard may stay the same but the levels could be deeper. This again will have a negative impact of existing properties downstream from any future development.

8. **Flooding exclusive to only Pinehaven/Mangaroa:** Why do only the Pinehaven and Mangaroa River show any sign of Ponding/overflowing whereas none of the other streams and rivers in Upper Hutt (including the quite signficant Hutt River) do? Why are there no other urban areas affected by hazards (flooding) in the entire Upper Hutt area? Some have similar bush clad hills and valleys behind them, yet they all appear to free of 'hazards' Why, for example once the huge volume of water (shown on maps 40 & 41) reaches the lower catchment of Silverstream, does it seems to magically disappear, rather than continuing into and along Hulls Creek? Is it because these are areas targeted by Council for future development, and who want to ensure that the proposed maps will allow this to happen? The Hutt River FMP (pp199-206) has maps showing the flood extent of the Hutt River. They paint a very different picture to what is proposed. Why are these not included as 'flood hazards' on the UHCC Hazards Maps? Over the course of its recorded flood history, starting in 1855, the Hutt River has been measured flowing up to 2000m3! (over 75 times as much water as the Pinehaven sub catchment hydrographs show) yet no mention of this.

9. **Ambiguity in the maps:** Unfortunately most people will be bamboozled by the abstract and ambiguous nature of the maps and will blindly accept them without question or realising what effect it will have on their property. This becomes a major issue when presenting or disclosing them for insurance purposes, or in the case of selling a property to prospective buyers. Insurers/prospective buyers will see a large shaded blue area and assume the worst without realising that most of what is shaded may only be a few millimetres deep and not actually be a hazard. This will in effect lead to a financial cost to the property owner either in increased premiums or realised drop in property value.

10. **Maps Changing:** over the course of the last four years there have been numerous 'Pinehaven Flood Maps' presented to the public (some not even made available to the public), each time changing in format and extent of flooding, that has resulted in confusion to the public and lack of confidence in the Council. We still do not have access to the data and assumptions that have been used to generate the maps – has future development been built in to them, thus increasing the amount of water shown? Why should the latest map be the any better than the last version, or the correct one?

11. **Expert Evidence – Mr Bob Hall:** I would also like to voice my support for the expert evidence provided from Mr Bob Hall for an adjacent property (27

Elmslie Road). His report covers most of what I have spoken about today, but in greater detail and also begs the question: How can the GWRC/UHCC maps be so grossly wrong? I would also like to mention the fact that Mr Hall was refused permission to speak to a submission in a previous hearing on this matter which I feel was a deliberate ploy by Council to supress information, and is probably also a breach of the Local Government Act 2002

12. **Summary:** I request that the Council withdraw PC42 on the points mentioned above, because by adopting PC42 in its current form, it will pose a real risk, both financial, and to the safety of people and their property. The Council is duty bound to adhere to protecting the community by any work or Plans it intends to carry out.

Attachments:
PC42_01_sitePlan_25_elmslieRd_250_v02-rotated.pdf
PC42_02_sitePlan_25_elmslieRd_250_v02-rotated.pdf
Pinehaven_hydrology_summary.pdf
Hutt-River-FMP_pp199-206.pdf

Darryl Longstaffe
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