KAREN WILLIAMS SPEAKING NOTES

APPEARING FOR KĀINGA ORA – HOMES AND COMMUNITIES (Submitter 81/Further Submitter 65)

HEARING STREAM 3 – August 8 – 1.30pm

1. My name is Karen Williams, and I am a Principal Planner at The Property Group. I am providing planning evidence on behalf of Kāinga Ora in respect of submissions and further submissions made on the Porirua Proposed District Plan in relation to the Natural Hazards chapter.

2. The key focus of my evidence relates to the relocation of the hazard flood maps outside of the Plan, and consequential amendments to provisions to achieve this.

3. In this regard, the key matters I address in my evidence relate to:

    a. **Flood hazard mapping as a non-statutory tool outside of the Plan**

    b. **Revised definitions to account for the above**

        i. New definitions are recommended to ensure hazards relevant to my evidence are identified in the Plan.

            1. "High Hazard Area"

            2. "Flood Hazard – Stream Corridor"

            3. "Flood Hazard – Overland Flow"

            4. "Flood Hazard – Inundation"

        ii. I support amending the definition of "Natural Hazard Overlay" to "Natural Hazard Area" as a consequential change to the above.

    c. **Consequential edits to provisions to reflect the change in terminology from Natural Hazard Overlay to Natural Hazard Area.**

    d. **Acknowledgement of the recommended amendments to provisions in the s42A report**

        i. Specifically support for changes made in relation to NH-P2, NH-P3, and NH-R6. I also suggest a similar amendment is made to NH-P4 to remove reference to the term "avoided" to align with other similar changes recommended within the s42A report (consistent with the general relief sought in submission 81.409).

4. For the most-part, my evidence stands except where I note suggested revisions, which are tabled with these notes. The suggested revisions are recommended to convey the purpose of

the non-statutory maps more clearly, following the discussion on this matter on day one of Hearing Stream 3.

5. It is my opinion that the suggested defined terms for each of the flood hazards provides the necessary link to determine compliance or otherwise with the relevant standards and rules. The flood modelling maps assist but are not the determining factor.

6. The natural hazards chapter differentiates between three types of flood hazard: stream corridors, overland flow and ponding/inundation. Each of these is categorised as a different hazard risk profile in APP-10, being high, medium, and low respectively, which is reflected in the proposed objectives, policies, and rules. Resource consent requirements are determined according to whether a proposed activity is within a high, low, or medium natural hazard area and/or within a stream corridor, overland flow, or ponding/inundation flood hazard.

7. The requirement for resource consent would be determined by whether an activity is located on land specified in the recommended flood hazard definitions. The non-statutory maps would assist applicants and the Council to inform an assessment against the definitions in the Plan (based on the modelled extent of the defined areas). However, they are not necessarily determinative of consent requirements.

8. Following the exchange between the Panel and Council officers on day one of Hearing Stream 3 in regard to this matter, I consider that some small, but material adjustments would clarify that the purpose of having Council flood maps outside of the plan is to assist plan users in demonstrating the modelled extent of flooding hazards, noting that these are subject to change.

9. In this regard, a revision to the recommended definitions set out in my evidence is suggested in Appendix 1 below, to provide a note to this effect. I note that the inclusion of this note is consistent with the comparable defined terms in the AUP and those set out in the s42a report(s) for Tauranga City Plan Change 27.

10. A small revision is also suggested to the recommended introductory text.

Appendix 1 – Recommended revisions to definitions and introduction in green

Natural Hazard Area ~~Overlay~~	means the areas identified in Table 3 Natural Hazard Areas ~~Overlays~~ in APP10 - Natural Hazard Risk Assessment and shown on the mapped Natural Hazard overlays in the District Plan. ~~and flood hazard maps held with Council. Council's planning maps~~ *Note: The Council holds publicly available information showing the modelled extent of flooding affecting specific properties in its GIS viewer. The maps are non-statutory and can be reviewed to take account of any property-specific information.*
Flood Hazard - Stream Corridor	Corridor consisting of a buffer of five metres either side of the centre of the stream, where in a 1% AEP flood event (assuming 15% increase in rainfall under climate change) the water depth exceeds 1m and the water velocity is greater than 2m per second. *Note: The Council holds publicly available information showing the modelled extent of flooding affecting specific properties in its GIS viewer. The maps are non-statutory and can be reviewed to take account of any property-specific information.*
Flood Hazard - Overland Flow	Area of land that conveys stormwater when the pipe or stream network capacity is exceeded or blocked in a 1% AEP flood event (assuming 15% increase in rainfall under climate change). *Note: The Council holds publicly available information showing the modelled extent of flooding affecting specific properties in its GIS viewer. The maps are non-statutory and can be reviewed to take account of any property-specific information.*
Flood Hazard - Inundation	Area of ponding that is greater than 50mm in depth in 1% AEP flood event (assuming 15% increase in rainfall under climate change) and which has low velocity flows. *Note: The Council holds publicly available information showing the modelled extent of flooding affecting specific properties in its GIS viewer. The maps are non-statutory and can be reviewed to take account of any property-specific information.*
High Hazard Area	Land within any of the following Natural Hazard Areas: a. Tsunami Hazard – 1:100 year inundation extent; or b. Coastal Hazard – Current Inundation; or c. Coastal Hazard – Current Erosion; or d. Stream corridor consisting of a buffer of five metres either side of the centre of the stream, where in a 1% AEP flood event (assuming 15% increase in rainfall under climate change) the water depth exceeds 1m and the water velocity is greater than 2m per second. *Note: The Council holds publicly available information showing the modelled extent of flooding affecting specific properties in its GIS viewer. The maps are non-statutory and can be reviewed to take account of any property-specific information.*

NH - Natural Hazards

Natural hazards are addressed in two chapters; the Natural Hazards chapter covers non-coastal hazards and the Coastal Environment chapter covers coastal hazards. Both chapters take the same risk-based approach to natural hazards. To avoid duplication, this chapter provides an overview of all hazards within Porirua City and the flexible risk-based approach to managing those hazards (both coastal and non-coastal). However, the objectives, policies and rules in the Natural Hazards chapter only deal with non-coastal hazards. The objectives, policies and rules in the Coastal Environment chapter address coastal hazards.

Porirua is susceptible to a wide range of natural hazards. When natural hazards occur, they can result in damage to property and infrastructure, and may lead to a loss of human life. It is therefore important to identify areas susceptible to natural hazards and to restrict or manage subdivision, use and development, including infrastructure, relative to the natural hazard risk posed in order to reduce the damage to property and infrastructure and the potential for loss of human life.

At this time, the District Plan focuses on the following natural hazards as they are the hazards that present the greatest risk to people and property, and whose future effects can be addressed through appropriate land use planning measures:

1. Flooding;
2. Fault rupture;
3. Tsunami;
4. Coastal erosion; and
5. Coastal inundation.

~~Porirua City Council hazard (non-coastal) areas are identified through mapped Hazard Overlays in the District Plan and Council's flood hazard maps held with Council.~~

The Plan requires the use of the best information available to identify land which is proposed for redevelopment which may be subject to natural hazards. This includes hazard maps, databases and reports held by the Council. The level of detail and the quality of this information is variable. This affects the Council's ability to identify and map land that may be subject to natural hazards.

The Plan has defined the criteria to identify land which may be subject to natural and coastal hazards, outlined in APP10 - Natural Hazard Risk Assessment. Each natural hazard and coastal hazard has been classified as High, Medium or Low depending on the level of relative hazard posed.

Flooding, coastal erosion and sea level rise are influenced by climate change. It is predicted that rainfall events will become more intense, storm events will become more common and sea levels will rise over the next 100 years. The flooding, sea level inundation and coastal erosion hazard layers in the Plan incorporate current climate change predictions.

Slope stability is addressed through the Earthworks provisions which require appropriate measures to be incorporated into Earthworks design to maintain the stability of sloping sites. Fire risk is addressed through requirements for firefighting water supply and access in various zone provisions and the Transport Chapter.

The City is also susceptible to natural hazards such as severe winds, wildfires, liquefaction and ground shaking from earthquakes. These hazards are managed by other statutory instruments or

processes, e.g. the Building Act 2004, Civil Defence Emergency Management Act 2002, the Local Government Acts 1974 and 2002 and the Fire and Emergency Act 2017.

For the purposes of clarity, the ~~proposed~~ natural hazard rules apply to buildings, and activities within the Natural Hazard Area ~~Overlay~~. If the building or the activity is not partially or fully located within the Natural Hazard Area ~~Overlay~~, then the natural hazard rules will not be triggered.

There are other natural hazard provisions relating to subdivisions, earthworks, renewable energy generation activities and infrastructure within the District Plan. These provisions are located within their respective chapter. For Subdivision, they take a similar approach as outlined in the Natural Hazard or Coastal Environment chapters. In instances where a combination of activities are proposed (for example earthworks, subdivision and a new building) within the Natural Hazard Area ~~Overlay~~, the relevant rules from each chapter will apply to the development.

Risk

Risk is a product of both the consequences and likelihood from a natural hazard. A risk-based approach to natural hazards balances allowing for people and communities to use their property and undertake activities, while also ensuring that their lives or significant assets are not harmed or lost as a result of a natural hazard event. When addressing the consequences from natural hazards, priority has been given as follows:

1. Protection of people including loss of life, and injury;
2. Maintaining key infrastructure to ensure the health and safety of communities (such as wastewater treatment systems); and
3. Maintaining functionality of buildings after a natural hazard event and the ability for communities to recover.

While in most instances development is unable to change the likelihood side of the risk equation, incorporating mitigation measures or avoiding any further development in certain hazard areas can reduce the consequences from natural hazards, thereby over time reducing the associated risks. Potential mitigation measures that can be incorporated into developments to reduce the consequences of natural hazards include:

1. Building design (for example minimum floor levels or the ability for buildings to be relocated over time);
2. The introduction, retention or improvement of existing natural systems;
3. Use or size of materials in infrastructure design and building construction;
4. The type of activities within buildings and structures; and
5. The use of soft engineering options (for example sacrificial fill).

Within the High Natural Hazard Areas ~~of the Natural Hazard Overlay~~, it is ~~unlikely the~~ challenging to appropriately mitigate the consequences from natural hazards ~~can be appropriately mitigated~~, and therefore ~~the only option available is to avoid~~ new development will be discouraged in these areas where it will increase the risk to people's safety, wellbeing and property.

APP10 - Natural Hazard Risk Assessment sets out the approach the Council ~~has taken~~ undertakes to identify~~ing~~ Natural Hazard Areas and managing risk in Natural Hazard Areas, including ranking the likelihood of a natural hazard event and~~,~~ hazard sensitivity ~~and the use of Natural Hazard Overlay~~. This Appendix also addresses the identification and management of risk in Coastal Hazard Overlay.

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