BEFORE THE INDEPENDENT HEARING PANEL APPOINTED TO HEAR AND MAKE DECISIONS ON SUBMISSIONS AND FURTHER SUBMISSIONS ON THE PROPOSED PORIRUA DISTRICT PLAN

IN THE MATTER	of the Resource Management Act 1991 (the Act)
	AND
IN THE MATTER	of Hearing of Submissions and Further Submissions on Variation 1 to the Proposed Porirua District Plan, and Plan Change 19 to the Operative District Plan under Schedule 1 of the Act

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STATEMENT OF EVIDENCE OF IAIN NICHOLAS DAWE ON BEHALF OF WELLINGTON REGIONAL COUNCIL

24 February 2023

Executive Summary

1 In order to give effect to the MDRS, Variation 1 to the PDP has identified medium and high density residential zones that occur with high and medium hazard overlays that are currently zoned general residential, especially within the coastal areas subject to ongoing impacts of sea level rise and climate change.

2 This approach is inconsistent with national and regional policy direction and best practice guidance and will make the Variation internally inconsistent. This is because it simultaneously discourages housing development in high and medium hazard areas, whilst also identifying these same areas as acceptable for housing intensification under the MDRS.

3 Greater Wellington seeks that the PDP employs the qualifying matters for natural hazards available to it in s77I of the RMA, namely the significant risks from natural hazards under section 6 of the RMA and the natural hazard policies in the New Zealand Coastal Policy Statement and exclude high and medium coastal hazard areas from the MDRS intensification requirements.

4 Greater Wellington opposes requests to remove the hazard overlays from the Proposed Porirua District Plan on the basis that it would not give effect to the Regional Policy Statement or represent best practice hazard planning and risk management approaches.

Introduction

5 My full name is Iain Nicholas Dawe. I am a senior regional natural hazards analyst and policy advisor for the Wellington Regional Council (**Greater Wellington**). I have been employed at the Council since 2006.

Qualifications and experience

6 I hold an MSc with 1st class Honours in environmental sciences and a PhD specialising in coastal processes from the University of Canterbury and over 20 years hazard management and resource planning experience.

7 As the natural hazards analyst for the Council I provide scientific analysis, commentary and research into natural hazards that affect the Greater Wellington region and to write and/or provide expert advice and evidence for hearings, the Environment Court and policy that deals with managing the risks from natural hazards. I provide advice to policy

analysts, resource managers, consents officers, engineers and elected councillors in the region, and to businesses and the wider public.

8 I was team leader writing the natural hazards section of the Regional Policy Statement and was a team coordinator for the review of the natural hazards sections of the Proposed Natural Resources Plan (**pNRP**).

9 Currently I am the chair of the national Hazard Risk Management Special Interest Group that represents regional councils across New Zealand. The group advocates for integrated hazards management across the local and central government sectors in areas of hazards planning and research.

Code of conduct

10 I have read the Code of Conduct for Expert Witnesses set out in the Environment Court's Practice Note 2023. I have complied with the Code of Conduct in preparing this evidence. My experience and qualifications are set out above. Except where I state I rely on the evidence of another person, 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 my expressed opinions.

Scope of evidence

11 My evidence addresses the Greater Wellington natural hazard submission points on Variation 1 to the Proposed Porirua District Plan (**PDP**) to give effect to Policies 3 and 4 of the National Policy Statement on Urban Development 2022 (**NPS-UD**) and implement the Medium Density Residential Standards (**MDRS**). In particular, Greater Wellington sought that that coastal hazard overlays be recognised as a qualifying matter to exclude them from intensification under the MDRS [OS74.76]. This submission point was rejected in the Proposed Porirua District Plan Officers' Report: Part A – Overarching Report, p. 78, para. 393, on the basis that sufficient evidence was not presented to support such an approach or how it would be applied. My evidence addresses these concerns and outlines the pathway and supporting reasoning to how such an approach could be implemented.

12 I will also briefly address submission points to remove flood hazard overlays from the PDP [OS76.58, OS76.84, OS76.85, OS76.86] seeking that the flood hazard overlay maps be removed from the PDP. Greater Wellington opposed the removal of these overlays from the PDP in its further submission [FS74.106 and 74.107] and supports the reasoning and

recommendation in the Proposed Porirua District Plan Officers' Report: Part A – Overarching Report, pp. 83-84, para. 425-433, to reject this matter.

Background – Sea Level Rise and Coastal Hazards

13 Sea level rise is a measurable change occurring in our environment to which will have to adapt. Greater Wellington commissions work on a regular basis (most recently in 2018) to analyse and understand rates and trends of sea level change in the Wellington region. This research shows that sea level has been rising steadily at rates averaging 2.1 mm/yr since records began in 1899, in line with the trend seen globally as measured on tide gauges and with satellite altimetry. This is driven dominantly by a mix of thermal expansion of the oceans as a result of global warming and polar ice cap melt. The trend is not reversing and we are locked into continuing sea level rise for at least the next several hundred years as a result of a lag between the more rapid warming of the atmosphere and the much slower process of heat transfer and uptake by the oceans.

14 Using the two most plausible mid-range scenarios of the latest Intergovernmental Panel on Climate Change (IPCC) report AR6 indicates that, for Porirua we may expect sea level rise in the order of 0.74 to 0.96 m over the next 100 years with a range of 0.53 to 1.26 m.

15 In addition to this eustatic or bulk change in the volume of the ocean, there are commonly vertical land movements that produce a local relative change in sea level. In the Wellington region, including Porirua, we are experiencing regional tectonic subsidence that has been measured by GNS Science on its continuous GPS network since the late 1990s and more recently with satellite altimetry as presented in the NZ Sea Rise programme. The data shows that Porirua is subsiding tectonically at rates in the order of 2.0 mm/yr, effectively adding the current rate of sea level rise. Taking this into consideration and using the same two IPCC scenarios, we may expect *relative* sea level rise for Porirua over the next 100 years to be in the order of 0.99 to 1.21 m with a range of 0.76 to 1.54 m.

Proposed District Plan

16 Porirua and the Wellington region in general faces many risks from natural hazards. In recognition of the effects that natural disasters have on our communities, PCC has identified and mapped a number of these, the majority of which are related to coastal hazards, and included them in the PDP as map overlays including:

- Flood hazards (stream corridor; overland flow paths; inundation extents);
- Coastal erosion hazards (current erosion areas; future erosion areas with 1.0 m sea level rise);
- Coastal inundation hazards (current inundation areas; future inundation areas with 1.0 m sea level rise);
- Tsunami hazards (1:100 yr extents; 1:500 yr extents; 1:1000 yr extents) and;
- Fault rupture zone.

17 Importantly, this mapping identifies both current hazards and future hazards as a result of sea level rise. Accordingly, the PDP contains an objective, policy and rule framework to constrain Hazard-Sensitive and Potentially Hazard-Sensitive activities in the high and medium hazard areas of these overlays. In the current PDP, many of these areas that have a residential zoning have been earmarked as General Residential, with a few places denoted as Medium Density Residential, such as at Paremata.

18 In its submission on the PDP, Greater Wellington was supportive of this approach to limit development in these areas as it was consistent with national and regional policy direction and risk based approaches to hazard management contained in best practice guidance documents including:

- Preparing for future flooding: a guide for local government in New Zealand, MfE (2010);
- Planning for Risk: Incorporating risk-based land use planning into a district plan, GNS Science (2013);
- Risk Based Approach to Natural Hazards under the RMA, Prepared for MfE by Tonkin & Taylor (2016) and;
- Coastal Hazards and Climate Change: Guidance for Local Government, MfE (2017).

19 One of the difficulties of sea level rise is that it is hazard multiplier, in other words, it compounds a lot of natural and coastal hazards that already occur in the region and locally. The problem this presents is that previous patterns of development and infrastructure in the coastal environment have not built with this change in mind and have not been designed to deal with the impacts it will bring. These impacts include; coastal erosion; inundation; surface flooding; enhanced storm surge impacts due to elevated mean sea level; impeded drainage at storm water outfalls and streams and; groundwater

interactions pushing up the water table leading to longer incidences of pluvial/surface flooding during rain storm events (that will also be exacerbated by climate change).

20 Mitigating these hazards is of scale, complexity and cost that is not an option to developers or individual homeowners especially in areas of pre-existing development. It would require large scale integrated engineered options including a mix of seawalls, coastal protection structures, stopbanks, upgraded stormwater networks, pumping stations and drainage networks to list just a few methods that could only be implemented by a Local Authority. Aside from the environmental impacts that many of these options have on the functioning of natural systems, which are discouraged in the NZCPS and RPS, the cost alone would quickly become prohibitive in order to develop these schemes in all places subject to high and medium coastal hazards.

21 The only country that has managed these type of schemes with any degree of success is the Netherlands and they have invested billions of dollars over generations to achieve this. One of the main planning tools used in their schemes is to have large setbacks from open coast locations where development is avoided in order to reduce the risk of flooding to the built environment.

22 The best course of action in our situation is to avoid intensifying these areas in the first place. This is the approach that the PDP took and included and object NH-O1 stating that; "subdivision, use and development in the Natural Hazard Overlay do not significantly increase the risk to life or property and do not reduce the ability for communities to recover from a natural hazard event".

PDP Variation 1 to give effect to the MDRS

23 In order to give effect to the MDRS, Variation 1 to the PDP (**the Variation**) has identified medium density and high density residential zones (**MDRZ and HDRZ**) that supersede the medium density and general residential zones in the existing PDP framework. Consequently, areas that have hazard overlays that are currently zoned general residential are now earmarked for high or medium density residential development, especially within the coastal hazard overlays.

24 Greater Wellington contends that this approach is inconsistent with national and regional policy direction and best practice guidance and will make the Variation internally inconsistent. This is because it simultaneously discourages or looks to constrain housing development (as a hazard sensitive activity) in high and medium hazard areas, whilst also

identifying these same areas as acceptable for housing intensification under the MDRS. While it may be argued that there is an objective, policy and rule framework in place to control this in terms of the natural hazards chapter, there is also a contrary enabling framework within the MDRZ and HDRZ chapters. This creates conflict within the PDP Variation, and could result in development that increases the risk to people and buildings being approved in areas where further intensification is inappropriate.

25 Section 77I of the Resource Management Act (**RMA**) provides for a Council to make modifications to the MDRS and the relevant building height or density requirements under policy 3 of the NPS-UD so that the standards are less enabling of development within residential zones. The modifications can be made if they satisfy one or more of the qualifying matters that are identified in s77I (a) to (j). The clauses of particular relevance to natural hazards are:

a) a matter of national importance that decision makers are required to recognise and provide for under section 6 and;

b) a matter required in order to give effect to a national policy statement (other than the NPS-UD) or the New Zealand Coastal Policy Statement 2010.

26 Section 6 of the RMA states that in relation to managing the use, development, and protection of natural and physical resources, authorities shall recognise and provide for a range of matters of national importance, including clause (h) "the management of significant risks from natural hazards".

27 Saliant to this, areas of Porirua identified as being in medium and high hazard areas are subject to *significant risks from natural hazards*. Therefore, it is appropriate that properties within these overlays are subject to this qualifying matter.

Relief Sought

28 Greater Wellington seeks that the PDP employs the qualifying matters for natural hazards available to it in s77I, namely the significant risks from natural hazards under section 6 of the RMA and the natural hazard policies in the New Zealand Coastal Policy Statement 2010 (NZCPS) (discussed in more detail below) and the areas of MDRZ and HDRZ in the medium and high coastal hazard areas should be rezoned General Residential Zone, or some other equally lower density residential zone. This change would mean there would be less enabling objectives, policies and rules within the zone chapters, thereby reducing

the conflict with the coastal hazard provisions and reducing the risk for intensification to occur in these areas.

29 There is precedent in the region for a Territorial Authority to use s77I of the RMA in this manner. The Wellington City Council section 32A report for natural and coastal hazards has identified that the MDRS should be limited for high and medium hazard areas. The limitation that has been applied includes; no further development in high hazard areas, which amounts to a removal of the MDRS, and; only allowing one residential unit on a site in a medium hazard area, which is a significant reduction in the MDRS permitted standards.

New Zealand Coastal Policy Statement

30 In recognition of the risks that natural hazards pose to our communities there is a range of national policy instruments guiding and directing local authorities to identify these risks and develop appropriate planning responses to manage these risks and impacts.

31 Policy 3 of the NZCPS outlines adopting a precautionary approach towards proposed activities whose effects on the coastal environment are uncertain, unknown, or little understood, but potentially significantly adverse with particular regard to the use and management of coastal resources potentially vulnerable to effects from climate change, so that:

a) avoidable social and economic loss and harm to communities does not occur;

b) natural adjustments for coastal processes, natural defences, ecosystems, habitat and species are allowed to occur; and

c) the natural character, public access, amenity and other values of the coastal environment meet the needs of future generations.

32 Allowing significant intensification in coastal areas subject to natural hazards, as the Variation signals, does not give effect to the precautionary approach or properly take into account the direction contained in these three clauses. There is a credible risk from erosion and inundation in the high and medium coastal hazard overlays, both presently and from future impacts as a result of sea level rise. Whilst we cannot predict all that the future holds with regards to how climate effects impact our environment, we have a good understanding of the range of possibilities as discussed above. This uncertainty is what the precautionary approach is designed to accommodate.

33 The changes we might expect are well within the lifetime of our housing stock. Building and investing in areas today that face risks from changes to the climate such as increased rainfall and from sea level rise will place a burden on future generations and local authorities to manage these effects. Avoiding this ahead of time and reducing the risk to life and property is a guiding principle of hazard risk management as incorporated into NH-O1.

34 Policy 25 of the NZCPS addresses subdivision, use, and development in areas at risk from coastal hazards. It states that in areas potentially affected by coastal hazards over at least the next 100 years:

a) avoid increasing the risk of social, environmental and economic harm from coastal hazards;

b) avoid redevelopment, or change in land use, that would increase the risk of adverse effects from coastal hazards;

c) encourage redevelopment, or change in land use, where that would reduce the risk of adverse effects from coastal hazards, including managed retreat by relocation or removal of existing structures or their abandonment in extreme circumstances, and designing for relocatability or recoverability from hazard events;

d) encourage the location of infrastructure away from areas of hazard risk where practicable;

35 The Variation does not give effect to these parts of Policy 25 in that there will be an increase in the risk from coastal hazards in identified hazard overlays if proposed developments meet the consenting requirements. Identifying coastal hazards areas for potential intensification does not encourage the location of infrastructure away from areas of hazard risk.

36 This policy also singles out managed retreat as a potential option to reduce the risk from coastal hazards. This is an idea that is being increasingly discussed as we deal with the ongoing impacts of major disasters that have affected our communities over the past decade including the Christchurch and Kaikōura Earthquakes and Cyclones Fehi, Gita, Hale and Gabrielle to name a few. Managed retreat becomes immensely more difficult as the density of development and level of investment increases making this option far less palatable and costly to future communities if we continue to develop in areas that we know are facing increasing risks from natural hazards as a result of sea level rise and climate change.

37 Policy 27 of the NZCPS outlines strategies for protecting areas of significant existing development likely to be affected by coastal hazards and provides a range of options for reducing coastal hazard risk that should be assessed including; "(a) promoting and identifying long-term sustainable risk reduction approaches including the relocation or removal of existing development or structures at risk".

38 In evaluating these options, the policy states that the approaches should focus on risk management that reduces the need for hard protection structures and similar engineering interventions and take into account the nature of the coastal hazard risk and how it might change over at least a 100-year timeframe, including the expected effects of climate change.

39 The Variation does not give effect to these parts of Policy 27 in that there will be an opportunity for an increase in the risk from coastal hazards in identified hazard overlays, both contemporaneously and over the next 100 years that will result in increased demand for engineering interventions to mitigate the risk.

Regional Policy Statement

40 The Regional Policy Statement for the Wellington region (**RPS**) identifies significant resource management issues, including natural hazards, and sets out objectives, policies, and methods to achieve the integrated management of natural and physical resources for the Wellington region.

41 The RPS contains a set of natural hazard provisions that provide local authorities with direction and guidance on hazard management issues that must be given effect to when making changes to city and district plans in accordance with section 75 of the Resource Management Act 1991.

42 Policy 29 of the RPS deals with avoiding inappropriate subdivision and development in areas at high risk from natural hazards directing regional and district plans to:

a) identify areas at high risk from natural hazards; and

b) include polices and rules to avoid inappropriate subdivision and development in those areas.

43 The RPS goes on to say that the process of identifying 'areas at high risk' from natural hazards must consider the potential natural hazard events that may affect an area and the

vulnerability of existing and/or foreseeable subdivision or development. An area should be considered high risk if there is the potential for moderate to high levels of damage to the subdivision or development, including the buildings, infrastructure, or land on which it is situated. The assessment of areas at high risk should factor in the potential for climate change and sea level rise, and any consequential effect that this may have on the frequency or magnitude of related hazard events.

44 In providing for the potential for high and medium coastal hazard areas to be intensified, the Variation is not giving effect to Policy 29 to avoid inappropriate development in high hazard areas or its direction to consider the vulnerability of future development from climate change and sea level rise.

Civil Defence Emergency Act

45 The Civil Defence Emergency (**CDEM**) Act sets out its Purpose in Part 1 to improve and promote the sustainable management of hazards in a way that contributes to the social, economic, cultural, and environmental well-being and safety of the public and also to the protection of property. To achieve this it outlines 4 principles to require local authorities to co-ordinate and encourage co-operation and joint action through regional groups, planning and related programmes across the areas of reduction, readiness, response, and recovery.

46 These are known as the 4Rs of hazard risk management and the Reduction R is focussed on policy and planning and land use decision making. It is one of the main levers that regional and local authorities have in helping manage the risks from natural hazards in order to build more resilient communities that are better prepared for natural hazards, including climate change impacts. Whilst the PDP does not have to give effect to the CDEM Act, it must not be inconsistent with it.

47 Employing the qualifying matters for natural hazards and the NZCPS under section 77I is an opportunity to avoid intensifying development in identified hazard areas and reduce the reduce the harm caused by natural disasters on our communities.

Regional Natural Hazards Management Strategy

48 The Wellington Region Natural Hazards Management Strategy was developed in 2019 as a collaboration between all councils in the region including Porirua City Council and was

signed up to by Kāpiti, Porirua, Wellington, Hutt and Upper Hutt councils and the Wellington Region Emergency Management Group.

49 One of the core objectives of the Strategy is that planning in the region takes a long-term risk-based approach. As discussed above, this is particularly important in light of the effects that are occurring as a result of climate change and sea level rise.

50 Allowing development to intensify significantly in areas that are recognised as having a high risk from natural hazards now and in the near future due to seal level, is not taking into account a long-term risk-based approach and is contrary to the aims of the regional hazards strategy.

Submissions to remove flood hazard overlays

51 Greater Wellington made a further submission [FS40] on the PDP in opposition to Kāinga Ora – Homes and Communities submission points [81.404, 81.408 & 81.409] requesting removal of flood hazard map overlays. Greater Wellington argued that all submission points related to the removal of the flood hazard overlays should be disallowed and strongly argued for the retention of the overlay within the PDP as notified.

52 This point was made again by Kainga Ora in its submission on the Variation [OS76.58, OS76.84, OS76.85, OS76.86] seeking that the flood hazard overlay maps be removed from the PDP and instead held within non-statutory GIS map layers. The PDP s42A officers report rejected this request. Greater Wellington again supports the officers recommendation to retain the flood hazard overlays within the PDP as it represent national best planning practice for hazard risk management. Providing for a separate set of maps (as proposed by Kāinga Ora) is unhelpful for Plan users and risks this important hazard information being missed. Further hazard information collected as part of the engineering design phase of a development can always be used to modify the original design and incorporated in due course in the district plan maps.

Closing points and conclusion

53 The Variation is now internally inconsistent because it simultaneously discourages development in high hazard areas but also earmarks it for intensification through the proposed zoning framework. Whilst there is an objective, policy and rule framework in place to limit this, there is an equally enabling framework in the zone chapters that could lead to development in these areas.

54 The Variation is also contrary to its own Natural Hazards Objective 1 and Policy 2. NH-O1 states that "subdivision, use and development in the Natural Hazard Overlay do not significantly increase the risk to life or property and do not reduce the ability for communities to recover from a natural hazard event".

55 The Variation does not give effect to the NZCPS coastal hazard policies. In particular, the Policy 3 precautionary approach for the use and management of coastal resources potentially vulnerable to effects from climate change, the Policy 25 direction to avoid increasing the risk of social, environmental and economic harm from coastal hazards over at least the next 100 years and Policy 27 to promote and identifying long-term sustainable risk reduction approaches.

56 In providing for the potential for high and medium coastal hazard areas to be intensified, the Variation is not giving effect to RPS Policy 29 to avoid inappropriate development in high hazard areas or the direction of the CDEM Act and the Wellington Region Natural Hazards Management Strategy to take a long-term risk based approach to reducing the exposure of communities to natural hazards.

57 While a certain amount of hazard mitigation can be undertaken to deal with flooding, and erosion at a property level, very little can be done by an individual to mitigate sea level rise. We are locked into at least one metre of sea level rise and probably more over the next 100 years.

58 Greater Wellington seeks that this approach be reconsidered and that the s77I qualifying matters are used to limit development in areas of medium and high coastal hazard of the map overlays. The coastal hazard overlays incorporate coastal erosion and inundation risk that is subject to worsen over time as a result of sea level rise and thus, it is appropriate that this mechanism be used to limit intensification in these areas.