BEFORE THE ENVIRONMENT COURT
I MUA I TE KOOTI TAIAO O AOTEAROA
TĀMAKI MAKAURAU ROHE

ENV-2020-AKL-000064

IN THE MATTER:	of the Resource Management Act 1991
AND	
IN THE MATTER:	of an appeal pursuant to clause 14 of the First Schedule to the Act
BETWEEN:	**AWATARARIKI RESIDENTS INCORPORATED**
	Appellant
AND:	**BAY OF PLENTY REGIONAL COUNCIL**
	First Respondent
AND:	**WHAKATĀNE DISTRICT COUNCIL**
	Second Respondent and Requestor of Plan Change 17
AND:	**WHAKATĀNE DISTRICT COUNCIL PLACES AND SPACES**
	Section 274 Party

STATEMENT OF EVIDENCE OF GERARD MATTHEW WILLIS – PLANNING (RPS)

10 August 2020

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QUALIFICATIONS AND EXPERIENCE

1. My full name is Gerard Matthew Willis. I am a director of Enfocus Limited, a resource management consultancy based in Auckland. I have practised as a planner and resource management specialist for the past 30 years.

2. I hold a Bachelor of Regional Planning (Hons) degree from Massey University and am a full member of the NZ Planning Institute. I am a certified decision-maker under the Ministry for the Environment's Making Good Decisions programme.

3. My previous experience includes working in policy and regulatory planning roles in local government both in New Zealand and in the United Kingdom. I also spent a considerable part of my early career in central government roles including as a senior policy analyst at Ministry for the Environment and environment adviser to the Minister for the Environment.

4. Since 2001, I have been a planning and environmental consultant, establishing my own practice in 2002. In that capacity I have acted for a number of district and regional councils and provided advice to companies, Maori trusts and government agencies on a wide range of regional and district planning issues.

5. Of note, I was contracted by the Bay of Plenty Regional Council (**Regional Council**) to assist with developing the natural hazards provisions of the operative Bay of Plenty Regional Policy Statement (**RPS**). Subsequent to that, I have assisted the Regional Council in a number of natural hazards-related projects.

6. I have also been involved in policy development at the national level including assisting Local Government New Zealand develop its position on natural hazards issues including authoring the 2014 report *Managing natural hazard risk in New Zealand – towards more resilient communities.*

7. I have read the Expert Witness Code of Conduct set out in the Environment Court's Practice Note 2014 and I agree to comply with it. I confirm that the issues addressed in this statement of evidence are within my area of expertise, except where I state I am relying on the specified evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from my expressed opinion.

SCOPE OF EVIDENCE

8. My evidence is given on behalf of the Regional Council and relates to the planning implications of the RPS on the two inter-related plan changes:

   (a) Proposed Plan Change 1 to the operative Whakatane District Plan (**PC1**); and

   (b) Proposed Plan Change 17 to the Bay of Plenty Regional Natural Resources Plan (**RNRP**), which was a private plan change request initiated by the Whakatane District Council (**WDC**) (**PC17**).

   (together referred to as the **Proposed Plan Changes**).

9. Following notification of the Proposed Plan Changes, I was asked by the Regional Council to prepare two reports:

   (a) A planning assessment of the advice provided to the Regional Council by GHD consultancy regarding property-scale risk of loss of life assessment. This was provided as a letter to Regional Council's Planning and Policy Manager, Julie Bevan, dated 5 November; and

   (b) An overview of the requirements of the RPS as they relate to natural hazards.

10. This evidence addresses those two reports. Rather than repeating that material, the reports are provided in full as **Appendices 1 and 2**.

11. My evidence will address the following:

   (a) Background to the Proposed Plan Changes;

   (b) Overview of the RPS requirements as they relate to natural hazards;

   (c) Division of responsibility within the RPS; and

   (d) Conclusions.

BACKGROUND TO THE PROPOSED PLAN CHANGES

12. As a consultant working for the Regional Council I had some early involvement in planning discussions around how to give effect to the RPS provisions that relate to natural hazards and existing uses. This included how to best resolve issues of debris

flow risk on the Awatarariki fanhead. That work resulted in the report *Existing Use Rights and Natural Hazards* which I co-authored for the Regional Council in 2017[1].

13. I was not directly involved in the detailed design of the planning provisions that form the Proposed Plan Changes. I did, however, provide comments on behalf of the Regional Council on the draft provisions and the draft section 32 report prepared by Craig Batchelar in 2017.

OVERVIEW OF THE RPS REQUIREMENTS AS THEY RELATE TO NATURAL HAZARDS

Taking a risk based approach - Policy NH 1B

14. The defining feature of the hazards provisions of the RPS is that they adopt a 'risk-based' approach. That approach is captured in Policy NH 1B which states:

> *Take a risk based approach to control the use, development and protection of land to avoid or mitigate natural hazards by assessing the level of risk according to the likelihood of natural hazards occurring and their potential consequences.*

15. Understanding what that means is key to understanding the balance of the RPS's hazards provisions.

16. Traditionally, natural hazards planning under the RMA, and its predecessor legislation, has not taken a risk-based approach, or perhaps more accurately, at best has generally adopted a *partial* approach to risk only.

17. That traditional approach has tended to focus on the *likelihood or probability* of hazards occurring, or occurring within a given timeframe. Where hazards were considered likely, attempts were made to limit, or in some other way control development to minimise potential harm and loss. When hazards were not considered likely, planning controls were generally not imposed.

18. This has meant that planning intervention has tended to focus on higher probability events (events likely to be experienced within a planning timeframe measured in years or decades). Lower probability hazard events (typically measured in centuries

[1] Gerard Willis and Sarah Fitzgerald, May 2017, *Existing use rights and natural hazards: A preliminary report for the Bay of Plenty Regional Council*. Note: This report was entitled a 'preliminary report' because it was contemplated at the time that a further report would be required. As it transpired, no additional report was commissioned.

and millennia) have not generally been considered in land use planning. Hence, there is a long history of managing, through planning intervention, flood risk and coastal erosion but very little experience in managing seismic risk or tsunami[2].

19. The RPS deliberately seeks to change that approach. In simple terms, it says that despite a hazard being of low likelihood, if the consequences, should it occur, would be severe (in the sense that it would affect a great many people or affect people severely – through causing serious injuries and/or fatalities) then the risk might still be considered high and be managed through planning controls. This is based on the widely accepted notion that risk is the product of likelihood *and consequence*.

20. The converse is also true. A high likelihood event that has low consequence (because, for example, few people are affected and no one is affected severely) may not necessarily be described as high risk despite the frequency with which an event might occur.

21. The RPS directs land use planning interventions to consider, in a spatial sense, both how likely a hazard will be *and* what the consequences would be in the area affected. That is what is meant by "taking a risk based approach".

22. The approach is promoted by the RPS for territorial authorities to adopt because of the ability of land use planning to influence the potential *consequences* of hazards (ie. the ability to determine the location, scale, intensity and design of development) and hence risk. In other words, while we can generally not manage the hazard (likelihood of an event occurring) we can manage (or at least strongly influence) the potential consequences and reduce risk in that way.

23. Accordingly, the intention of requiring a risk-based approach to be taken to hazards management is to ensure land use decision-making (both major "one-off" decisions and small decisions that have a cumulative effect over time) does not allow hazard risk to grow through allowing potential *consequences* to increase to the point where the risk exceeds an appropriate level.

24. However, as discussed further below, and relevant to the Proposed Plan Changes, the RPS also requires that where natural hazard risk is already high, efforts are made to reduce that risk to acceptable levels, including through land use planning interventions.

[2] In some cases even high likelihood hazards have not been well managed for a variety of reasons including poor information and awareness.

25. The overall methodology to be taken by both the Regional Council and territorial authorities when taking the required risk based approach is set out in Policies NH 2B to NH 14C of the RPS. These are detailed provisions compared to most RPSs. The reasons for the level of detail, and the process used to develop it, are explained in Section 3 of Appendix 2 of this evidence.

26. Other characteristics of the risk based approach, and the conceptual framework of the overall methodology to be used, are set out in Section 4 of Appendix 2.

NATURAL HAZARD OUTCOMES AND EXCEPTIONS

Risk classification - Policy NH 2B

27. Policy NH 2B provides that natural hazard risk is to be classified as either High, Medium or Low, using the risk methodology that is set out in Appendix L of the RPS. An area of land's risk classification affects what approach councils must take to the management of that land.

28. Appendix L sets out two options to undertake the risk assessment and classify hazard risk. First, it includes a very detailed 'default' risk assessment methodology as summarised in section 4.2 of Appendix 2 of this evidence. Importantly, however, Appendix L also allows for an *alternative* methodology to be used (referred to as a recognised risk assessment methodology or 'RRAM').

29. To be able to use a RRAM it must be "included in a regional, city or district plan or recognised in the consideration of a resource consent consideration". I understand that the Proposed Plan Changes are based on a risk assessment undertaken not using the default methodology of Appendix L but using a RRAM, being the Australian Geomechanics Society's (AGS*) Landslide Risk Management*, Australian Geomechanics, Vol 42, March 2007.

30. Although the AGS methodology is not currently included in the operative Whakatane District Plan (or the operative Regional Natural Resources Plan - RNRP) it will be included in the Whakatane District Plan as part of Plan Change 1.

31. In my opinion, the inclusion of the AGS methodology *contemporaneously* with the introduction of planning provisions to manage the risk outcome classified by the AGS methodology, is both acceptable and appropriate. I hold that opinion because:

(a) The provisions that address the risk classified by the AGS methodology will not take effect until the AGS methodology has been "included" in the district plan (ie. the inclusion in the operative plan and the implementation of the associated provisions will happen at the same time). The 'inclusion' of the AGS methodology will not be retrospective. The planning provisions set out in the Proposed Plan Changes will rely on a methodology endorsed through the plan-making process. Any person not satisfied with the methodology could have made a submission opposing the use of the methodology. If such a submission were considered by decision-makers to have merit, the plan change could not have proceeded, or could have proceeded utilising a different methodology.

(b) The notification of the AGS methodology and the associated hazards management provisions contemporaneously allows for transparency because it allows the community to understand the implications of using the methodology in a particular place to address a particular risk. In my opinion, it would be very difficult for the community to have understood the implications of the endorsement of the AGS methodology 'in the abstract' (ie. if it had been the subject of a separate purely "technical" plan change). The means of doing this by incorporation by reference is address by Mr Olliver.

(c) The AGS methodology is a well-recognised risk assessment approach and is referenced in the Regional Council's Natural Hazards Risk Assessment User Guide as a RRAM and hence acceptable (subject to inclusion in a regional or district plan) as an alternative to the Appendix L default.

(d) Technical advice received from Mr Chris Massey, is that the classification of risk on the Awatarariki fanhead is, in any event, the same (ie. 'High') when assessed using the AGS methodology as it is when assessed using the default Appendix L methodology, if similar inputs are used.

Required natural hazard risk outcomes at the natural hazard zone scale – Policy NH 3B

32. For each of the three risk classifications (High, Medium and Low) Policy NH 3B specifies the outcomes that councils must achieve when managing risk at the natural hazard zone scale. Most relevantly to the Proposed Plan Changes, Policy NH 3B a) states that councils must:

a) *In natural hazard zones subject to High natural hazard risk reduce the level of risk from natural hazards to Medium levels (and lower if reasonably practicable);*

33. This requires a reduction of risk to at least Medium (or lower if that is reasonably practicable). Where risk is already Medium the obligation is to reduce that risk to as low as reasonably practicable.

34. The natural hazards zone is the spatial scale that a council chooses to undertake its risk assessment at. It is defined as follows:

> *Natural hazard zone means that zone within a hazard susceptibility area defined by the relevant regional, city or district plan, on the basis of existing or proposed land use, as the appropriate geographic scale to assess hazard risk. For the avoidance of doubt, a natural hazard zone may be an entire hazard susceptibility area or such smaller zone as is appropriate taking account of the nature and scale of actual and potential land uses that are exposed to the natural hazard.*

35. I discuss the importance of the natural hazard zone as the appropriate scale for assessment in Appendix 1 of this evidence.

Managing risk at the scale of the development site - Policy NH 4B

36. As noted above, Policy NH 3B is about managing risk at the natural hazard zone scale. These natural hazard zones may cover both existing developed areas and areas where there is potential for further development. However, Policy NH 4B of the RPS also requires that risk associated with new development be managed at the individual development site level.

37. In simple terms, Policy NH 4B seeks to ensure that when any individual development site is developed or redeveloped (ie. it is 'new development'), the assessed level of risk after completion of the development will be Low.

38. A key purpose of Policy NH 4B is to ensure that new areas of high natural hazard risk are not created through the development process and that, over time, redevelopment of individual sites will drive down overall risk levels at the broader natural hazard zone scale.

Managing risk in the coastal environment – Policy NH 5B

39. Policy NH 5B is included in the RPS specifically to ensure it gives effect to the NZCPS. It addresses only coastal erosion and coastal inundation and hence is not directly relevant to the Proposed Plan Changes.

Exemptions from the natural hazard risk management approach – Policy NH 6B

40. Policy NH 6B provides for exemptions for activities in certain situations from having to achieve the risk outcomes of Policies NH 3B to NH 5B. These situations are when an activity has a significant social, economic, environmental or cultural benefit or is a lifeline activity; and, it has a functional need for the location. In my opinion, the residential activities affected by the Proposed Plan Changes do not meet those criteria and accordingly I do not consider Policy NH 6B to be relevant to the proceedings.

RISK ASSESSMENT PROCESS

41. Policies NH 7A to NH 10B set out how and when risk assessment is to be undertaken.

Identifying areas susceptible to natural hazards – Policy NH 7A

42. Policy NH 7A requires councils, through the plan making process, to identify (by way of mapping) areas susceptible to specified natural hazards. Relevant to the Proposed Plan Changes, one of those specified hazards (Policy NH 7A (d)(i)) is debris flow.

43. The policy does not require that all such mapping be undertaken at once but specifically provides for councils to prioritise effort. Accordingly, the RPS allows Policy NH 7A to be given effect to through a full plan review, all of district/region hazards Proposed Plan Changes, or in a more piece meal fashion through area-specific Proposed Plan Changes. However it is an 'A' policy meaning it does need to be given effect to through regional and district plans (as explained at section 2.2 of Appendix 2).

44. Importantly, susceptibility mapping is an input to risk assessment, it is not necessarily an indication of risk because it does not take into account consequences.

Assessment of natural hazard risk at the time of plan development – Policy NH 8A

45. Policy NH 8A requires councils, through regional and district plans, to identify *natural hazard zones*, determine the natural hazard risk in each zone and classify that risk as either High, Medium or Low consistent with Policy NH 2B. Again, in my opinion, nothing in this policy requires that it be given effect to through a single plan change, or only at plan review time. However, if a council chooses to do a plan change to address a natural hazard risk, ahead of a full plan review, it would need to give effect to Policy NH 8A.

46. In my opinion, the Proposed Plan Changes are required to, and do, give effect to Policy NH 8A in respect of debris flow hazard on the Awatarariki Fanhead.

Assessment of natural hazard risk before Policies NH 7A and NH 8A have been given effect to – Policy NH 9B

47. The RPS recognises that giving effect to Policies NH 7A and NH 8A will take some time and that in the interim development proposals will arise that could contribute to, and/or be subject to, natural hazard risk.

48. Policy NH 9B sets out the policy to apply in those circumstances by requiring larger scale development to be subject to risk assessment. It is not directly relevant to the Proposed Plan Changes.

Assessment of natural hazard risk after Policies NH 7A and NH 8A have been given effect to – Policy NH 10B

49. Policy NH 10B requires that development proposals for subdivision, land use change or intensification arising after Policies NH 7A and 8A have been given effect to (i.e. after susceptibility mapping and natural hazard zone-scale risk assessment and classification has been undertaken), must all be subject to hazard risk assessment where required by the relevant district or regional plan. Some exceptions apply but they are not relevant to the Proposed Plan Changes.

50. In my opinion, Plan Change 1 gives effect to this policy by requiring that:

> within the Awatarariki Medium Risk Debris Flow Policy Area (AMRDFPA);
>
> i. Unless the **Council** otherwise determines that some other assessment is appropriate, an application for resource consent for an extension to a building, a new building, or any other new structure within the AMRDFPA, shall include a report on its suitability, prepared by a **Suitably Qualified and Experienced**

> **Practitioner**, certifying that the extension, building or other new structure will reduce the risk to the activity, and any building and its occupants from a debris flow, to a level that is as low as reasonably practicable, and will avoid causing any increased risk to other activities, and any buildings and their occupants on any other site, from a debris flow
>
> Section 3.5.1.1 (o)

51. Furthermore, all restricted activities in the Awatarariki High and Medium Risk Debris Flow Policy Areas are subject to matters of discretion that require risk to be assessed.

Providing for Climate Change – Policy NH 11B

52. Policy NH 11B requires that the effects of climate change be incorporated into hazard risk assessment. Relevantly for the Proposed Plan Changes, this includes a requirement to use authoritative up to date projections of rainfall and storm frequency and severity. I understand that the evidence of Peter Blackwood for Whakatane District Council will address these matters further.

DIVISION OF RESPONSIBILITY WITHIN THE RPS

Managing natural hazard risk through regional and district plans – Policy NH 12A

53. Policy NH 12A is a "belts and braces" policy that removes any doubt about the role of plans (both district and regional) in including methods to manage natural hazards risk so as to achieve the outcomes set out in Policy NH 3B (as identified through implementation of the process set out in Policies NH 7A to NH 10B).

54. Part (a) of the policy requires that plans take into account risk reduction measures, including those that may be necessary to address risk to existing land uses. I understand this to be a broad requirement that might require plans to, for example, protect existing features (such as dunes) that provide risk mitigation, or provide for the construction of engineering solutions as may be necessary to protect existing development as well as other planning responses.

55. Part (b) requires plans to control the location, scale and density of development and land use change. This is clearly aimed at providing for plans to have a direct role in managing the potential *consequences* of hazards.

56. Part (c) requires plans to give certainty for risk reduction works.

57. As I understand Policy NH 12A, it is a key part of the RPS hazards management framework because it expressly assigns a role to regional and district plans in delivering on the risk outcomes. In my opinion, it requires the regional and district councils not just to passively address natural hazard risk in any new plan or relevant plan change. It requires a positive plan-making response.

Allocation of responsibility for natural hazard identification and risk assessment – Policy NH 13C

58. Policy NH 13C allocates responsibility for hazard susceptibility mapping (under policy NH 7A) and risk assessment (under Policy NH 8A). Relevant to the Proposed Plan Changes, it allocates responsibility for both susceptibility mapping and risk assessment in respect of debris flow to district councils.

Allocation of responsibility for land use control for natural hazards – Policy NH 14C

59. Policy NH 14C follows logically from the preceding policies. As noted above, in the context of the Proposed Plan Changes, Policy NH 13C says that it is the Whakatane District Council's role to identify debris flow vulnerable areas and to assess the risk in those areas. Policy NH 12A says that regional and district plans must, amongst others things, control the location, scale and density of development in those identified areas to achieve the risk outcomes of Policy NH 3B.

60. Policy NH 14C then allocates the responsibility for exercising the land use control, made necessary by the High risk classification that Whakatane District Council has assigned and by Policy NH 12A's requirement for a land use planning response.

61. Policy NH 14C, and its associated Table 12a, allocates the responsibility for the land use planning response. In simple terms, it says that, outside of the coastal marine area, it is both the regional and district councils' role to develop objectives and policies and methods other than rules. It is the district council's role to develop rules. That simply reflects the established position that district councils control land use and development for other purposes and it makes sense, in terms of integrated management, for the district council to retain that function with respect to natural hazards.

62. However, there is an important qualification to that arrangement. A footnote in Table 12a records that:

> *Under Section 30 (1)(c)(iv) of the Act, the Regional Council has the function to control land use for the avoidance or mitigation of natural hazards. The Act allows the Regional Council to exercise that function in such a way as to override any existing use rights available under Section 10(4) of the Act. The allocation of responsibilities under this policy does not remove the right of the Regional Council to exercise its functions and powers in that regard. Should it choose to do so, any such provisions will be subject to a plan or plan change process under Schedule 1 of the Act.*

63. I understand that note to mean that, despite district councils having responsibility for rules controlling development for natural hazard risk management, when it comes to the need to control *existing uses* (which are not able to be controlled by district councils due to the provisions in s10 of the Act) the Regional Council can exercise powers under Section 30 (1)(c)(iv) of the Act. The footnote clarifies that Table 12a is not to be read to suggest that the Regional Council's function under that provision of the Act may not be used.

64. The notified version of Change 2 to the RPS (which introduced the natural hazards provisions into the RPS) included within Table 12a express articulation that controlling land use in respect of existing uses was a regional council function. That express reference within Table 12a was deleted in favour of the footnote approach in response to submissions. The intention of doing so was to avoid the inference that the Regional Council's Section 30(1)(c)(iv) function would necessarily be applied every time existing uses were found to be subject to high risk. Clearly that was not the intention as I note at section 5.3 of Appendix 2 to this evidence.

CONCLUSIONS

65. The RPS sets out a comprehensive management framework for natural hazards designed to promote a risk based approach to both new and existing development.

66. In my opinion, the Proposed Plan Changes give effect to the RPS, as Whakatane District Council has assessed the debris flow risk on the Awatarariki Debris Flow, and by adopting planning measures to manage that risk to comply with the risk outcomes of Policy NH 3B.

67. It is consistent with the allocation of responsibilities set out in the RPS that the Whakatane District Council take responsibility for debris flow vulnerability mapping, risk assessment and the development of a planning (development control) response. The promotion of a change to introduce a regional plan rule to manage risk associated with existing uses is contemplated by, and consistent with, the RPS.

Although not a responsibility expressly set out by Policy NH 14C, such a regional rule is, in my opinion and subject to s32 assessment, necessary to give effect to RPS Policies NH 3B and NH 12A.

Gerard Matthew Willis
10 August 2020

Appendices:

Appendix 1 – Planning Assessment of GHD Risk Assessment Advice
Appendix 2 – Report on Natural Hazard Provisions of the Bay of Plenty Regional Policy Statement

"Appendix 1"

28 November 2019

Julie Bevan
Policy and Planning Manager
Bay of Plenty Regional Council
PO Box 364
Whakatane 3158
New Zealand

Dear Julie

Policy and Planning Assessment of the GHD Technical Assessment of Debris Flow Risk Management

GHD has recently finalised a technical assessment of debris flow risk management on the Awatarariki Fanhead, Matatā. That technical assessment was itself largely a review of a 2015 report on the same subject by Tonkin and Taylor (T&T).

You have asked me to comment on the GHD technical assessment by providing a complementary planning/policy assessment of the issue that places the GHD work in a broader planning context. The key question around whether the suggested alternative approach to risk assessment could be implemented was acknowledged by the author of the GHD assessment to require consideration by a wider range of disciplines than just geotechnical and hence your request.

This letter responds to your request.

The GHD Report

The GHD report (dated 31 October 2019) essentially concludes that the T&T report is robust and although is it 'cautious' in its approach, in the circumstances that is not unreasonable. However, the GHD report goes on to suggest that:

> *From a technical perspective, it could be feasible with further work, to specifically risk assess each individual property and, to implement a staged or progressive strategy of risk management (i.e. commencing with voluntary retreat followed by retreat from "high" risk properties and in turn retreat from "medium" risk properties). Rigorous management, planning and policy considerations, along with other local government considerations would also apply.*

The methodology (expressed as a mathematical a formula) used by T&T to assess loss of life risk is that promoted by the Australian Geomechanics Society (AGS). GHD's comments around property-specific risk assessment are based on a view that some of the factors in that formula will vary across the fanhead rather than being uniform as assumed in the T&T assessment. As I understand it, those factors include[1]:

a. the probability of spatial impact at the specific location (whether the hazard will impact the property)
b. the temporal spatial probability (whether an individual will be on the property to be "impacted" by the hazard event)

[1] The other relevant factor is the annual probability of the event occurring but there appears to be no disagreement on that matter

c. vulnerability of the individual (whether the individual is likely to lose their life if the property is impacted when they are present)

For each of these factors the GHD report makes a case that, for various reasons, there could be variation across the properties within the High and Medium Risk Zones and, accordingly, concludes that applying the AGS risk assessment 'formula' to each property could demonstrate that different levels of risk exist (and that some properties might be exposed to less than "High" risk meaning that a lesser management, or staged, strategy could be justifiable).

Planning Assessment

The Resource Management Act 1991

Section 6(h) of the Resource Management Act (the Act) requires council to recognise and provide for the management of significant risks from natural hazards.

Section 7 (i) of the Act requires council to have particular regard to the effects of climate change.

These are clear, positive and directive obligations that are reflected in functions ascribed to regional councils and territorial authorities in sections 30 and 31. Section 31 states that the regional council has the function of controlling the use of land for the purpose of (amongst other things) *"the avoidance or mitigation of natural hazards"*

Territorial authorities have a similar function under section 31 (1)(b)(i). To the extent that those functions overlap, it is the responsibility of the regional policy statement to allocate the specific responsibilities. That is achieved by Policy NH 13C of the Bay of Plenty RPS (BOPRPS).

The Regional Policy Statement and Natural hazard zone

The BOPRPS sets out a detailed approach to natural hazard management at section 2.11 and the corresponding policies NH 1B to NH 14C (summarised in Appendix K of the RPS). In board terms, the BOPRPS gives effect to council's functions and responsibilities under the Act by a suite of policies that require:

- the identification of natural hazards (including by mapping)
- risk assessment of those hazards (by consideration of both the likelihood of events occurring and the consequence of events should they occur)
- management of the risk according to whether it is assessed as High, Medium or Low.

For current purposes, one of the most salient policies is Policy NH 3B which states that risk assessment is to be carried out at the **natural hazard zone scale**. Natural hazards zone is defined by the BOBRPS to mean:

> *That zone within a hazard susceptibility area defined by the relevant regional, city or district plan, on the basis of existing or proposed land use, as the appropriate geographic scale to assess hazard risk. For the avoidance of doubt, a natural hazard zone may be an entire hazard susceptibility area or such smaller zone as is appropriate taking into account the nature and scale of actual and potential land uses that are exposed to the natural hazard.*

The definition is important because the approach to risk assessment anticipates assessment of impacts (consequences) at a community scale, and recognises that the consequences will be dependent to large degree of the prevailing land use. Assessment of risk to existing land uses at very small scales (eg. individual dwellings) would mean that the community wide potential consequences would not be considered or, if considered, the consequence thresholds (including those set out in Table 21 of Appendix L) could never be exceeded. Risk is something that applies at all scales but by simply focusing on the individual property scale, the potential exists for cumulative effect on community well-being, services and infrastructure to be over-looked.

However, the concept of a *natural hazard zone* is critical for other reasons too. Importantly, it allows a council to take a community-wide and integrated view of risk. High risk to an individual building within a natural hazard zone does not make that wider zone subject to high risk and hence may require no particular action under the BOPRPS's planning framework. In other words, using the natural hazard zone

as the scale for risk assessment provides for some tolerance of property-scale risk. (ie. there are community-scale thresholds that must be exceeded before management action across a community is required).

Risk assessment of each individual property would be burdensome and focus council's attention on the individual rather than the community as a whole. Accordingly, risk assessment at the natural hazard zone scale can be critical to making the planning approach manageable and sustainable – particularly as it applies to existing developed areas. It allows individuals to take responsibility for individual (property scale) risk and for councils to get involved only when the scope of the risk is "community" in scale. When risk is high at the community, or natural hazard zone, scale all properties need to be managed to ensure the risk is reduced to at least 'Medium'.

Allowing individual properties within a High risk natural hazard zone to individually (re)assess risk at a property level with the view to somehow being excluded from the wider management response, would likely lead to ad hoc-ism and a range of costs and risks to local authorities and infrastructure providers (who would be required to keep services in place in a high risk environment) and to people other than the excluded property occupants (who would likely continue to have access to the area due to the need for the territorial council to maintain public vehicular access to properties and may be encouraged to visit unaware of the risk).

Risk Assessment Methodology

Central to the policy framework is a detailed approach to hazard risk assessment. The default approach to risk assessment is set out in Appendix L. However, Appendix L of the BOPRPS does provide for use of alternative "recognised risk assessment methodology" that is provided in a regional or district plan.

The AGS assessment methodology is identified in the BOPRPS guidance material as an acceptable alternative and GHD is (as I understand it) correct to endorse its use by T&T from a technical perspective.

From a planning perspective, the key point is that use of the AGS methodology as an alternative to the Appendix L methodology, does not obviate the need to *give effect to the policies* of the BOPRPS and in particular Policy NH 3B. In other words, it is my expert planning opinion that whatever methodology is used it must be applied (as required by the Act) at the *natural hazard zone* scale to give effect to Policy NH 3B of the BOPRPS.

Policy NH 8A is also highly relevant to the GHD risk assessment. That policy requires the Whakātane District Council to define natural hazard zones within the debris flow susceptibility area as part of the current proposed Plan Change processes. I understand it has done that through the identification of the Awatarariki High and Medium Risk Debris Flow Policy Areas.

The only way in which the property-scale risk assessment approach could be undertaken consistent with the requirements of the BOPRPS would be for the proposed Plan Changes to identify each property as a natural hazard zone. In my opinion that would be impractical and, for the reasons set out above, sets an undesirable and/or unmanageable precedent.

Property-scale Risk Assessment and Planning Implications

The importance and value of the natural hazard zone-scale assessment is outlined above. In addition, however, I consider that the approach implied by the GHD suggestion to be impractical and unenforceable in planning terms (I do not question the GHD conclusion that it may be feasible in purely technical terms).

- Planning and temporal probability of impact

As I understand GHD's property-scale assessment idea, it would allow individual property assessment of the matters listed in (a) to (c) earlier in this letter. That is, it would look at, for example, whether the occupants of a dwelling worked, or were retired, or worked part time (or were otherwise engaged in regular off-site activity) to assess the *temporal* probability of impact. That is, the less time spent on the property the less the risk of loss of life will be assessed to be. Similarly, it would look at individual vulnerability, which I understand to involve considering matters such as whether the occupants are able-bodied or whether they are physically impaired in some manner. Similarly, it may look at whether the occupants sleep downstairs or upstairs, or in a front bedroom or rear bedroom, the dwelling construction and similar matters. Once an assessment has been made on that basis, those attributes and behaviours

would need to be "fixed" for the risk assessment to remain valid and accurate into the future[2]. As I would understand it from a planning perspective, that would require plan rules (and/or consent conditions) to control those activities so that the loss of life risk does not change (ie. increase) over time. I note here, that it is a well-accepted principle of planning that when assessing effects (including risk) one must look at potential effects and that requires you to look beyond what is occurring now and what might occur lawfully under the provisions of the plan. In other words, it is inappropriate to assume the risk will remain static is the plan allows change in use, activity or practice. The plan needs to ensure that risk factors remain static.

In my opinion that would be impractical. Plans would have to micro-regulate in ways that are intrusive on people's lives and in practice would be impossible to monitor and enforce. It may even be that the required regulation would infringe human rights by leading to differentiated planning outcomes depending on someone's employment status or physical disabilities (for example).

- Planning and probability of spatial impact

The GHD report also suggests that the 100% probability of impact over the spatial extent of High and Medium Risk Areas may be questioned due to the potential for rocks deposited by previous debris flows to act as a buffer (protecting certain properties from damage - to some degree). I am unable to comment on that suggestion as it is purely a technical matter. I note only that no detailed technical evidence of that potential is available. As far as I am aware, the most complete technical assessment is that provided by T&T (as Appended to the Section 32 report). Hence there is nothing to suggest that a change to the planning approach is warranted.

Other Matters

It is not entirely clear what the GHD report anticipates (if anything) in terms a policy/planning approach different to that currently proposed. It refers to potential implementation of a staged, or progressive, strategy of risk management (i.e. commencing with voluntary retreat followed by retreat from high risk properties and in turn retreat from medium risk properties).

I note that under that approach GHD anticipates retreat by every property occupier at some point. This includes properties subject to medium risk, which is appropriate given that the BOPRPS refers to medium risk needing to be reduced to as low as reasonably practicable. In that case, GHD appears not to be suggesting a different planning approach but rather an *operational strategy* that implements the planning approach in a particular order. While sequencing implementation (within a short time period) may make sense (to the extent that not all property owners may be able to be dealt with contemporaneously), this suggestion may raise issues about access to funding and timeframes. From a planning perspective, if the risk is such that retreat is the appropriate course of action, and funding support is available to facilitate that retreat, then the case for any delay in affecting that retreat would seem hard to justify. The GHD report does not refer to funding issues (appropriately), and that is something that I too am unable to comment on other than to say that the feasibility of a sequenced approach would be dependent on the continued availability of funding support over the full implementation period.

In summary, it seems to me that sequencing of implementation might be appropriate as an *operational matter* (ie. how a planning framework is implemented in practice) but there seems to be no logic to it from a planning framework design perspective. There is nothing in the BOPRPS to support such an approach.

Conclusion

The issue raised by GHD's technical assessment fundamentally comes down to the question of *what scale* risk assessment of existing development should be undertaken at. From a policy and/or planning perspective, it is my expert opinion that the appropriate scale is the natural hazard zone that defines areas within hazard susceptibility areas on the basis of similar contiguous land uses. In my opinion that is the what the BOPRPS anticipates.

[2] I note that section 4 of the GHD assessment accepts that risk profiles would need to be reviewed over time as they may change with changing occupancy, more vulnerable occupants, building deterioration etc.

Furthermore, I consider that attempting to undertake risk assessment at the property-scale (while apparently technically feasible) would lead to a need for detailed planning regulation to ensure the risk assessment remained valid over time. In my opinion, such detailed regulation would be inappropriate and impractical.

Please let me know if I can assist further with this matter.

Yours sincerely

Gerard Willis

Director, Enfocus Ltd

Natural hazards provisions of the Bay of Plenty Regional Policy Statement

1 Introduction

This report provides background to, and explanation of, the Bay of Plenty Regional Policy Statement's (BOPRPS) natural hazard provisions. It has been prepared in the context of:

- Proposed Plan Change 1 *(Awatarariki Fanhead, Matatā)* to the Whakatāne District Plan (PPC1); and
- Private Plan Change Request - *Proposed Plan Change 17 (Natural Hazards)* to the Regional Natural Resources Plan.

The report's purpose is to assist the section 42A reporting officer understand the operative BOPRPS as it relates to natural hazards on the basis that PPC1 must *give effect* to those provisions. Of necessity, this report summarises and simplifies the provisions and certain aspects such as the complex risk assessment approaches. Reference should be made back to the operative wording to confirm specific obligations.

2 The provisions

2.1 Natural hazards issues and objective

Explanation of natural hazards issues and the risk-based approach taken is set out at section 2.11 (from page 110a) of the BOPRPS.

The BOPRPS's objective for natural hazards is:

> *Avoidance or mitigation of natural hazards by managing risk for people's safety and the protection of property and lifeline utilities.*

That is described as Objective 31 and is found at page 110e of the BOPRPS.

2.2 Policies

The BOPRPS contains 14 policies relating directly to natural hazards (NH1 – NH14). These are located at pages 168a to 168J of the BOPRPS.

- There are 'A' Policies (meaning they are broad directive policies that give direction to regional and district plans). They are NH 7A, NH 8A and NH 12A. As discussed further below, each of these policies sets out the specific obligations of those preparing plans to identify hazard susceptible areas, assess risk and manage that risk within the provisions of the plan.
- Nine are 'B' policies (meaning they are specific directive policies relevant to both resource consent consideration and regional plans). They are NH 1B – NH6B and NH 9B - NH 11B. Those policies set out steps in the risk assessment process that apply both in the preparation of plans and to the consideration of (some) consent applications.
- Two are 'C' policies (meaning they allocate responsibility) – NH 13C and NH14C. These allocate responsibility between the Bay of Plenty Regional Council (BOPRC) and city/district councils for different types of hazards and for land use control respectively. These responsibilities are discussed further in section 5.3 below.

2.3 Methods

Various methods are described to give effect to policies (as itemised under each policy). Some of these methods are generic but several are hazards-specific. These include:

- Method 23A - Review hazard and risk information

- Method 23B - Investigate and apply measures to reduce natural hazard risk
- Method 23C - Natural defences against natural hazards
- Method 24A - Provide guidance on taking a risk management approach to natural hazards
- Method 73 - Provide information and guidance on natural hazards
- Method 74 - Collaborate to establish natural hazard risk

2.4 Appendices

Three appendices provide detail and explanation of the overall hazards management framework.

- *Appendix K* - Provides a schematic overview of the natural hazards risk management policy framework.
- *Appendix L* – Sets out the step-by-step methodology to be used for assessing risk (as the default if no alternative risk assessment methodology is recognised by the relevant plan or as part of a consent application).
- *Appendix M* – Provides a non-exclusive list of potential ways to mitigate risk. It is provided for illustrative purposes only. The appropriate solution will be site and or hazard specific. What is necessary will also depend on the level of risk and how much risk reduction is therefore required.

2.5 User Guide

The policy framework and risk assessment methodology are complex. To assist users to understand the requirements, a Natural Hazard Risk Assessment User Guide (the User Guide) was prepared shortly after the natural hazards provisions became operative. While it has no statutory weight, it provides a useful guide to interpretation.

3 History of BOPRPS's hazard provisions

The natural hazards provisions of the BOPRPS have a long and involved history. The second generation BOPRPS was notified in 2010. The decisions version of the RPS contained a set of natural hazards provisions that purported to take a risk-based approach to natural hazards but which lacked detail around how they would be implemented. Consequently the decision to include those provisions was appealed to the Environment Court by six parties who sought greater certainty about how the approach then proposed would apply in practice.

That appeal led to a 'working party' process involving the regional council working with those appellants in the development of provisions that included the detail and clarity requested. That process ended without appeals being resolved. During the course of the process it became apparent that the nature and scale of change required warranted new provisions being notified as a variation (later to become Change 2 (PC2)) to the BOPRPS. The Environment Court agreed to adjourn consideration of the appeal and allow a variation to be prepared. The Regional Council made the decision to initiate a variation to the proposed BOPRPS in October 2013. PC2 was notified on 1 October 2014.

While PC2 was approached largely from a 'clean sheet', the Regional Council's original vision of a "risk based" approach was retained but with considerably more detail added to how that would work in practice.

Key influences in the policy design were:

- AS/NZ ISO 31000 being a family of standards relating to risk management codified by the International Organization for Standardization and adopted as a NZ Standard. The purpose of ISO 31000:2009 (since updated) is to provide principles and generic guidelines on risk management. The ISO standard provided the fundamental conceptual understanding of risk and the risk management process as applied by PC2.
- The conceptual work published by GNS in 2013 providing a framework to consider both natural hazard

likelihood and consequences in land use planning decision-making[1].

The plan change process involved:

- Working closely with a Stakeholder Reference Group (including the original appellants) to develop the basic policy framework.
- Engaging with iwi and the community, in particular, on the risk thresholds. (Risk thresholds define what communities' risk tolerances are and are critical to developing the Low, Medium and High risk categorisation. This risk threshold a core aspect of the risk management approach).
- Verifying the risk assessment methodology with a range of experts from public and private sector agencies from across the country.
- Holding pre-hearing meetings with submitters.
- Scenario testing the methodology by independent consultancy Aecom.

Thirty-five primary submissions and 18 further submissions were received on proposed PC2. Hearings, chaired by an Independent Commissioner, were held in June and recommendations made in August 2015 and decisions made in October 2015. Thirteen submitters were heard and six further submitters tabled statements. Numerous refinements and clarifications were made to PC2 as a result.

Despite that, decisions on PC2 were appealed by several developer interests (acting collectively). That appeal focussed largely on matters of technical detail associated with Appendix K (note this was later referenced as Appendix L) and were able to be resolved by consent order, allowing PC2 to be made operative in May 2016.

In short, the approach proposed by PC2, though novel in planning terms, was thoroughly tested through two appeals and extensive community consultation and stakeholder engagement processes.

PC2 was subsequently awarded the Best District or Regional Plan Award by the New Zealand Planning Institute in 2017 and received the Commonwealth Planning Award in 2018.

My role in the process was the Regional Council's independent planning adviser. Essentially, I translated hazard management and risk concepts into workable planning provisions and advised the hearings committee on associated implementation issues.

4 Key features

4.1 A risk-based approach

As noted above, the fundamental distinguishing feature of the BOPRPS is that it takes a genuine risk-based approach to natural hazards management.

Risk is conceptualised as the product of *likelihood* (of an event occurring) and the *consequence* (that would result when that event occurs). There was a strong desire to move away from the traditional approaches such as simple hazard lines which demarcated where a hazard was likely to impact over a given timeframe – an approach that:

- Ignored other timeframes (ie. events of less likelihood);
- Ignored the nature of the 'receiving environment' of the hazard area and whether the hazard was likely to do significant social, cultural or economic damage or result in loss of life; and
- Reinforced the erroneous view that hazard risk is solely about the potential for a location to experience a hazard event.

[1] WSA Saunders, JG Beban and M Kilvington, *Risk-based land use planning for natural hazard risk reduction*, GNS Science Miscellaneous Series No. 67, September 2013.

The risk-based approach of the BOPRPS is intended to ensure the *risk* is considered, recognising that risk can generally be managed, while hazards generally cannot be managed.

Accordingly, the risk-based approach adopted in the BOPRPS incorporates a number of important planning dimensions:

- It takes into account *low likelihood but high consequence* events (which have historically not been considered in land use planning).
- It requires (to the extent practicable) that risk be assessed in a *quantified* manner according to clear thresholds (metrics) of acceptability/non acceptability.
- It establishes thresholds of risk (High, Medium and Low) which are used to target the level of planning intervention (ie. the policy response depends on the level of risk present).
- It expressly recognises the ability to address risk in different ways through the development design process (rather than just 'avoiding' susceptible areas).
- The approach applies to *existing uses* not just in the context of forward planning and future development proposals using the same risk thresholds.

4.2 Risk management process

The risk management process is depicted in Figure 2 of section 2.11 of the BOPRPS as reproduced below:

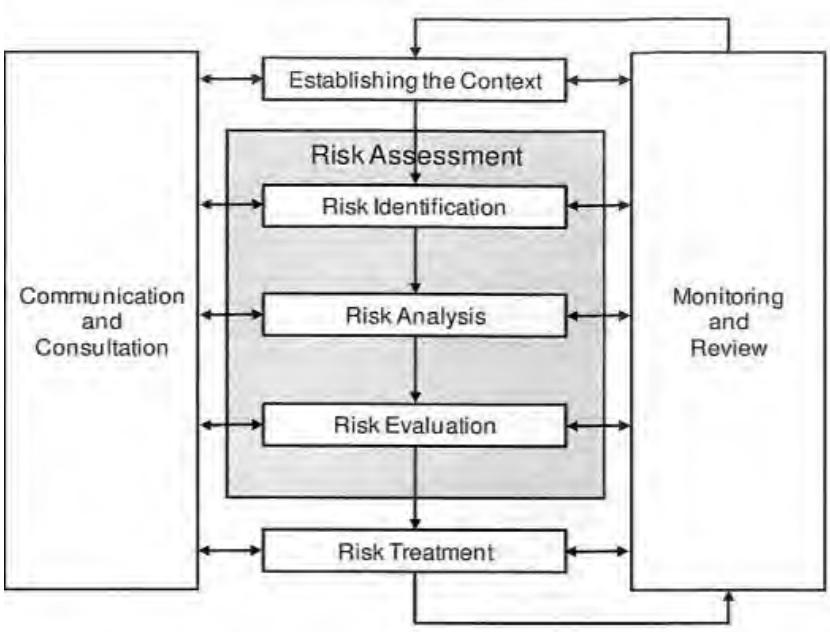

Figure 1 Risk management process

The process is in turn reproduced from the AS/NZ ISO 31000: 2009 standard referred to earlier. It was used to provide the organising structure of the natural hazards provisions of the BOPRPS.

- ***Establishing the context*** is achieved by section 2.11 and by policies NH 1B and NH 2B. These policies establish the over-arching risk-based approach to be taken in all natural hazards management in the Bay of Plenty Region and set out the three-level risk classification framework (ie. requiring all risk to be classified as either High, Medium or Low).
- ***Risk identification*** is addressed by policies NH 7A, NH 8A, NH 9B and NH 10B. Policy NH 7A specifies the types of natural hazards that must be identified through the mapping of *hazard susceptibility areas*. Of particular relevance debris flow is specifically mentioned as a hazard to which the susceptibility.

mapping obligation applies.

Policy NH 8A requires the assessment of natural hazard risk at the time a regional or district plan is developed (ie. as part of the land use planning process). It requires the identification of *natural hazard zones*. Natural hazard zones are areas within a hazard susceptibility area which form the scale at which risk assessment is to be undertaken. One hazard susceptibility area may include many different natural hazard zones reflecting the different land uses and communities of interest within a susceptibility area.

Policy NH 9B requires the assessment of natural hazards risk at the time of subdivision or change or intensification of land use (ie. at resource consent stage). It is intended to apply as an interim measure *until* the district or regional plan identifies hazard susceptibility areas and natural hazard zones and undertaken the risk assessment process. The policy applies where the development is 5ha or larger but may apply to smaller sites at the consent authority's discretion.

Policy NH 10B applies *after* the district or regional plan has undertaken the risk assessment process. It requires resource consent applicants to undertake risk assessment where the district or regional plan requires it. This is necessary because new development affects the risk (most commonly because it changes the potential consequences should a hazard event occur).

- ***Risk analysis and evaluation*** is addressed by Appendix L. For the purpose of risk assessment (i.e. understanding the extent of risk) Appendix L requires either:

    a. the use of the default methodology set out in detail in that appendix; or

    b. use of an alternative recognised risk assessment methodology (RRAM) as may be set out in a relevant district or regional plan or otherwise recognised through the resource consent process.

  The default methodology uses two risk metrics: the *risk screening matrix* and *annual individual fatality risk* (AIFR).

  The *risk screening matrix* (see Figure 2 below) is used to determine the level of risk (High, Medium, Low) for the event of maximum risk (i.e. the event with the combination of likelihood and consequence that yields the greatest risk[2]). Appendix L steps the user through the process of:

    - selecting an event of a specified likelihood (as set out in Table 20);
    - determining the potential consequences of such an event (where possible using quantitative means);
    - assigning a consequence level (using Table 21); and
    - determining the level of risk by reading off the Risk Screening Matrix (based on the event likelihood and the assigned consequence level).

  This methodology is an adaptation of the approach promoted by the GNS guideline referenced in footnote 1.

  An iterative approach is then taken with events of different likelihoods assessed in the same way to ensure the *maximum risk* is identified and assessed. This iterative or 'secondary analysis' process also involves application of the AIFR. The AIFR method can result in re-categorisation of risk (as determined solely by the Risk Screening Matrix) where prescribed thresholds of AIFR are exceeded. This has the effect of elevating the importance of potential human fatalities in determining levels of risk. Including the AIFR in the default methodology reflects an important principle of the BOPRPS hazards approach, being that loss of live needs to be considered in the context of the scale of the

[2] Noting that the maximum risk will not necessarily be represented by the event with the greatest potential consequence.

affected community[3].

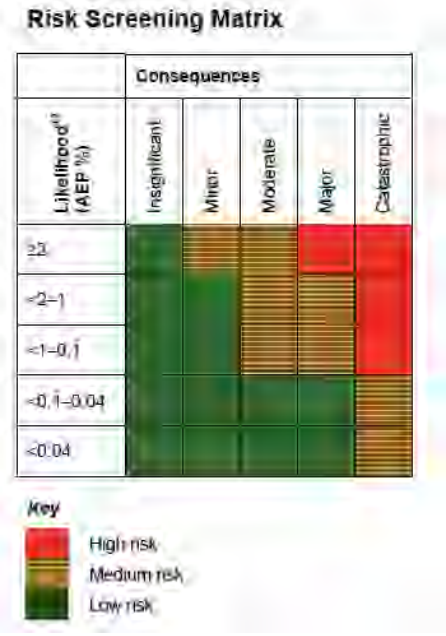

Figure 2 Risk Screening Matrix

- ***Risk treatment*** is addressed by policies NH 3B, NH 4B, NH 5B, NH 6B, NH 12A. *Policy NH 3B* is core to the overall framework. It applies broadly to new and existing development and requires the achievement of specific risk outcomes at the *scale of the natural hazard zone*. The overarching strategy promoted by the policy is:

    a. Where risk is High it must be reduced to Medium or lower if possible.

    b. Where risk is Medium it must be reduced to be as low as reasonably practicable.

    c. Were risk is Low it must be maintained within the Low range.

    Policy NH 4B applies specifically to land that is to be developed for urban use (ie. new development - being greenfield development, infill and rural lifestyle development). It applies at the scale of the *development site* and requires that a Low level of risk is achieved after completion of the development (unless the broader natural hazard zone, of which the development site forms a part, is retained as Low risk).

    Policy NH 5B applies in the coastal environment. This was included in the BOPRC in recognition of the need to give effect to Policy 25 of the NZCPS. It is discussed further in section 5.1 below.

    Policy NH 6B sets out a policy test for when an exemption from the approach to required outcomes (as otherwise required by the above referenced policies) applies. In brief for an activity to be able to establish or remain notwithstanding High or Medium risk the activity needs to have a significant social, economic or cultural benefits and have a functional need for the location.

    Policy NH 12A describes the role of regional and district plans in promoting the risk outcomes outlined above.

[3] If the loss of life risk was determined solely by considering the health and safety metric of the consequences table (Table 21 – Appendix L), hazard events would need to result in estimate 11+ deaths before the "catastrophic" consequences (triggering a High risk classification) would triggered.

5 Specific policy issues

5.1 100 year minimum planning timeframe

The concept of maximum or minimum planning timeframes is generally something that the BOPRPS approach seeks to move away from. As previously explained, that is because planning timeframes encourage users to assume that events of some likelihoods will not occur within the planning timeframe, despite the potential for such events to represent maximum risk.

However, for some hazards a defined planning horizon does make sense and/or is otherwise required by higher order planning documents.

Policy NH 5B applies to the management of coastal erosion and coastal inundation. It was included in the BOPRPS in response to the need to give effect to Policy 25 of the NZ Coastal Policy Statement (NZCPS). That requires that in areas "*potentially affected by coastal hazards over at least the next 100 years",* redevelopment or land use change that would increase risk is to be avoided. The approach of the NZCPS is somewhat in conflict with the approach promoted through the BOPRPS[4] and hence Policy NH 5B was included to ensure statutory compliance. In fact all parts of the coastal environment are potentially affected by natural hazards in the next 100 years it is just that some events are more likely to occur than others. For that reason, Policy NH 5B takes a pragmatic approach of focussing on coastal erosion and coastal inundation being hazards of high likelihood in a 100 year planning period.

There is some logic in focusing on a defined planning timeframe for coastal erosion and inundation because they are hazards that do not present solely as discrete "events" (although they may be exacerbated by particular events). Rather they are a result of continuous coastal processes/on-going sea level rise that can be modelled, and the future results over defined timeframes, predicted to some extent. Hence the planning period can be important for defining the susceptibility area for these types of hazard.

The other important point to note is that other natural hazards in the coastal environment (including, for example, debris flow) are managed under the general natural hazards policies (Policies NH 3B, NH 4B and NH 12A) not Policy NH 5B. In other words, the idea of a 100 year planning timeframe does not apply to those other hazards (including debris flow).

Policy NH 11B relates to providing for climate change. It also requires that a 100 year timeframe is applied as a minimum value in coastal hazard assessments. Again, that is appropriate to the extent that coastal hazards are related to sea level rise and weather-related conditions are predicted to change over time in a gradual/continuous manner.

Importantly, the policy is in two parts. The first part refers to incorporating the effects of climate change and applies generally to hazard risk assessment policy. The second part refers to the 100-year timeframe and applies only in respect of coastal hazards for the reasons given. Hence, again, the 100 year timeframe does not apply to the debris flow hazard.

5.2 Different risk thresholds for existing and new development

One of the more subtle but important differences in the BOPRPS's approach to natural hazards management is that it places a more onerous obligation on new development to achieve a Low level of risk (after completion of the development) - Policy NH 4B as discussed above.

Where risk to existing development is High the obligation on the responsible authority is to reduce that risk to Medium (and lower if reasonably practicable). Where risk to an area of existing development is Medium the obligation is to reduce that risk to be as low and reasonably practicable - Policy NH 3B as discussed above.

This difference recognises that reducing risk to existing development will generally be considerably more

[4] This is for several reasons, including because NZCPS does not adopt the notion of thresholds of risk suggesting instead that *any* change is to be avoided (whereas under the BOPRPS if risk in a natural hazard zone is assessed as Low some increase in risk may be acceptable provided the risk stays Low within the natural hazard zone).

challenging than in the context of managing new development. Despite that, High risk to existing development is regarded as intolerable and must be reduced at least to Medium levels.

5.3 Responsibilities

Policy NH 13C allocates responsibility for natural hazards identification and risk assessment. It makes the regional council responsible for susceptibility mapping and area based risk analysis and evaluation for some natural hazards. Territorial authorities are responsible for susceptibility mapping and risk analysis and evaluation for the balance of the hazards specified in Policy NH 7A.

Relevant to Whakatane District's PC1, Policy NH 13C makes the Whakatane District Council responsible for susceptibility mapping and risk analysis and evaluation in respect debris flows with the Whakatane District.

Policy NH 14C and its associated Table 12a, allocates responsibility for exercising land use control to manage risks from natural hazards. On land outside the Coastal Marine Area, developing objectives and policies (and methods other than rules) is a responsibility shared by both the Regional Council and territorial authorities. Responsibility for developing *rules* that control land use rests with territorial authorities.

However, the note under Table 12a sets out the legal reality that the Regional Council has the function, under section 30(1)(c)(iv) of the Resource Management Act (the Act), to control land use for the avoidance or mitigation of natural hazards. Furthermore, it notes the other legal reality that existing use rights under section 10(1) of the Act are not "protected" from regional rules. In other words, a regional land use rule can control an existing land use whereas a district council land use rule may not (assuming that existing use meets the existing use tests of section 10 of the Act).

The note makes clear that although there is no presumption that the regional council would use its land use control function to control land uses that would otherwise enjoy existing use rights, it retains the ability to do so. It also serves to remind us that it is open to other parties (including territorial authorities) to request a change to the regional plan to control existing uses where that is the most effective and efficient planning response.

This was a matter of some debate during the preparation of the BOPRPS hazards provisions. It was well accepted, at the time, that regional rules could play an important part in managing down risk in existing developed areas where risk had been assessed as High and action was required to be taken. However, it was considered inappropriate to expressly include that responsibility in Table 12a since that would suggest that the responsibility would always be exercised whereas in reality the function would likely to be exercised only in exceptional circumstances (ie. in respect of existing uses exposed to High risk and where other risk mitigation options were not feasible, or were not the most effective or effective in terms of section 32 of the Act).

5.4 Use of the Australian Geomechanics Society's Landscape Risk Management methodology

As noted in section 4.2 above, Appendix L allows a person undertaking a risk assessment to use an alternative methodology to that set out in full in that Appendix. The User Guide refers to these alternative methodologies as RRAMs.

The User Guide provides criteria for determining a qualifying RRAM. The purpose of including the criteria in the User Guide is to provide the basis upon which a resource consent applicant or a submitter in a regional or district plan process can make their case that a particular methodology should be adopted in preference to that set out in Appendix L.

The User Guide also deems the Australian Geomechanics Society's Landslide Risk Management 2007 (AGS) methodology to comply with the criteria. That means that the AGS methodology can be used in the context of a resource consent application instead of the Appendix L methodology, without the need for further detailed justification. It also means that it may be included in a district plan without risk that the regional council will oppose it. It does not mean that the AGS can be used without first, or at least contemporaneously, being included in the regional or district plan.

During development of the natural hazards provisions the opportunity to use alternative methodologies was

important to several parties and hence provision was expressly made for that. The AGS methodology was one of the alternative methodologies discussed at that time and its inclusion in the User Guide reflects the acknowledgement that it was a credible and appropriate alternative methodology.

6 Summary: obligations on Whakatane District Council and Bay of Plenty Regional Council arising from the BOPRPS

In summary, the Whakatāne District Plan must "give effect" to the BOPRPS, including the now operative natural hazards provisions introduced to the BOPRPS as Change 2.

To give effect to the natural hazards provisions of the BOPRPS the Whakatane District Plan must, in relation to the debris flow hazard on the Awatarariki Fanhead:

- Define the debris flow *hazard susceptibility area* (Policy NH 7A)
- Defining *natural hazard zones* and assess the natural hazard risk within each zone using the Appendix L methodology or a RRAM, such as the AGS - provided it includes the AGS as part of the associated plan change. (Policy NH 8A (a) &(b))
- Classify the level of risk within each zone as either High, Medium or Low (Policy NH 8A (c))
- Implement the risk outcome strategy of reducing risk to existing uses where it is assessed as High or Medium (Policies NH3A and NH 12A)

The Bay of Plenty Regional Council has no mandatory responsibilities under the BOPRPS in respect of taking specific action to reduce debris flow risk on the Awatarariki Fanhead (or anywhere else).

Despite that, to the extent that land use rules are determined as the most effective and efficient means of reducing risk to existing uses, the Regional Council may decide to adopt land use rules in accordance with section 30(1)(c)(iv) of the Act. Alternatively, there is nothing in the RPS that bars a regional plan change introducing such regional rule being initiated by a party other than the Regional Council. Under Section 32 of the Act Whakatāne District Council could be expected to consider such an option and adopt that option if it is the most effective and efficient means of meeting its objectives.