

Porirua Proposed District Plan (PDP)

Hearing Stream 3 – Natural Hazards

Submitter 156: Heriot Drive Ltd (7 Heriot Drive)

Submitter 157: Raiha Properties Ltd (15 Raiha Street)

Tabled evidence Rodney David Witte in response to the Supplementary planning evidence of Torrey James McDonnell for Porirua City Council and matters that arose on Hearing Day 1.

Introduction

1. This tabled evidence has been prepared in response to the Supplementary Planning Evidence of the Council's s42A reporting officer, Mr Torrey McDonnell, dated 1 December 2021. I am conscious that although I am unable as a minor proportional owner of affected properties to comply with the Code of Conduct for expert witnesses, nevertheless I am the only planner, other than Mr McDonnell, presenting before commissioners. Accordingly, this evidence also attempts to assist commissioners in grappling with the matters that arose on day 1 of this hearing.

Scope

2. Mr McDonnell (para 40) has raised the potential of scope issues in my evidence-in-chief. That is a matter for legal submissions and for commissioners to determine. However, I acknowledge it could be an issue for some aspects of my earlier evidence. In order to bring the matters I have previously raised clearly within scope I have in this tabled evidence reviewed the seismic provisions of the recently operative Kapiti Coast District Plan 2021 for consistency with both MfE Active Fault guidance 2003 and the PDP approach. I also comment on the Greater Wellington Regional Council Natural Hazard Strategy 2017 as it relates to the PDP.

Greater Wellington Regional Council Natural Hazard Strategy 2017

3. This non-statutory document is best described as a "partnership" between the various local government councils and agencies in the Wellington region. It commits them to

work together to understand and reduce risks from natural hazards. It was developed through an interagency consultation process with opportunity for public feedback but seems to have no statutory basis under either the RMA or Local Government Act 2002. However, in respect of the PDP it does contain some useful principles. The most relevant of those for the PDP are

“2.1 Summarize all risk-based methodologies and agree on consistent approaches for each type of hazard.”

4. I have compared the approach taken for managing fault rupture under the Kapiti Coast District Plan (operative 2021) compared with the PDP. As discussed later in this evidence, whereas Kapiti has closely followed the MfE active fault guidance methodologies the PDP has not.

“3.1 Develop regionally consistent and co-ordinated provisions through a set of agreed city /district/regional plan objectives, policies, rules and methods.”

5. Also discussed later in this evidence, the Kapiti approach to managing fault rupture risk is, in general, specific to fault rupture and more nuanced than the PDP.
6. In my opinion there seems to be significant inconsistencies in the approach to managing the risk of fault rupture between the two neighbouring district plans.

MfE Active fault guidance 2003 ('MfE guidance'):¹

7. At para 32 of his supplementary evidence Mr McDonnell states:

“... Ohariu fault has an estimated recurrence interval of > 2000 to < 3,500 years. MfE's 2003 active fault guidance is to apply non-complying activity rules to most development on a fault with this class of recurrence interval due to the substantial life-safety risk they pose.”

8. For the reasons set out below I disagree with Mr McDonnell that non-complying activity rules should be applied to most development. I also consider the PDP has misapplied the MfE guidance.

¹ “Planning for Development of Land on or Close to Active Faults – A guideline to assist resource management planners in New Zealand” Kerr, J et al, Ministry for the Environment, July 2003

9. The MfE guidance provides useful guidance for RMA practitioners, but it does not have the statutory status of a National Environmental Standard or National Policy Statement. While the guidance sets out important principles it also notes:

“The principles recognise that a different planning approach is needed for an area that has not been developed (a greenfield site) and an area that has been developed or subdivided and there is an expectation to build.” (Introductory statement “Principles for Planning Approaches” Chapter 2 page 3)

10. The PDP policies and rules in relation to fault rupture do not adopt different planning approaches for “greenfields” sites and developed sites.
11. The guidance sets out a risk-based approach that combines:
- a) fault recurrence interval,
 - b) fault complexity, and
 - c) building importance category.

Fault Recurrence

12. Dr Litchfield’s evidence-in-chief states:

“.... Litchfield and van Dissen (2014) ... assign the Ohariu fault to Recurrence Interval Class II (2000-3500 years) with low-medium confidence.” (at para 24).

Fault complexity

13. The guidance (Table 8.1) defines three fault complexity types:

- A. Well defined
- B. Distributed
- C. Uncertain.

14. The GNS Science fault trace report for Porirua City Council² identifies the southernmost part of the Ohariu fault rupture zone as “Uncertain- constrained” (figure 2 page 14 – attached as Appendix 1 to this evidence).

15. Importantly the report states:

² Porirua District Fault Trace Study” Litchfield NJ, Van Dissen RJ, GNS Consultancy Report 2014/213.

“For planning purposes, GNS recommend that uncertain-constrained Fault Complexity Zones should be viewed in the same fashion as a *distributed* Fault Complexity Zone.” (page 8).

16. By not including the important fault complexity information in the PDP it is not at all clear how the “High” and “Low” hazard areas for the Ohariu fault rupture zone have been determined in APP10 Table 3 nor why the Pukerua fault rupture zone is the only fault rupture zone with a “Medium” hazard ranking. In the PDP the Ohariu fault rupture zone for its entire length through Porirua is shown on the planning maps as a consistent hatched pink band suggesting it is all of the same fault complexity (Appendix 2). However, the 2014 GNS report shows that the fault complexity varies along its length (Appendix 1 southern and 1A northern). The Operative Kapiti Coast District Plan 2021 maps clearly show this variability in fault complexity along the length of the fault avoidance zone and as discussed below, the different fault complexities determine the resource consent status for each type of building risk (Appendix 3).

Building importance category

17. Table 9.1 of the MfE guidance sets out four categories (with one sub-category – 2b) of building importance based on risk levels for building collapse according to building type, use and occupancy. Under that table structures with a low degree of hazard such as farm buildings are category 1 and buildings used for essential or medical facilities are category 4. (Appendix 4)
18. Table 9.2 of the MfE guidance then sets out the relationship between fault recurrence interval and building importance and importantly provides for a one step increase in building importance category between previously subdivided or developed sites and “greenfield” sites. (Appendix 5)
19. The PDP does not incorporate the one step increase of providing for higher risk buildings in the developed areas compared with “greenfields”. Furthermore, the PDP has adopted three categories of activities (Hazard-sensitive, Potentially-hazard-sensitive, and Less hazard sensitive) rather than the five categories in the MfE guidance. (PDP APP10 Table 2). Accordingly, the PDP categories are inconsistent with those in the MfE guidance.

Resource consent activity status

20. The MfE guidance at Table 11.1 (Appendix 6) contains a comprehensive matrix of resource consent activity status by fault complexity and fault recurrence interval for “greenfields” site and the corresponding table 11.2 (Appendix 7) applies to developed and already subdivided sites.
21. From Table 11.2 it can be seen (red underline mine) that in respect of developed sites in Recurrence interval class II (ie Ohariu fault) with “distributed” fault complexity (from GNS 2014 report) Building importance classes 1 and 2a are a RMA permitted activity status and class 2b is “*discretionary*” (Italics intended).
22. Notes at the bottom of Table 11.2 state:

“*Italics*” -show that the activity status is more flexible. For example, where *discretionary* is indicated controlled activity status may be considered more flexible”.
23. A further footnote states:

“Note that the (restricted) discretionary category has not been shown in Tables 11.1 and 11.2 but may be considered more effective than the non-complying activity status as it allows for targeted assessment criteria to be developed.”
24. Turning back to Table 9.1 (Appendix 4) building Importance Class 2b is described as:

“Normal Structures and structures not in other categories. Examples:
.....multi occupancy residential, commercial (including shops), industrial, office and retailing buildings designed to accommodate less than 5000 people and also those less than 10,000 sq m gross floor area.”
25. Thus the guidance indicates that while the above class 2b buildings should have a consent status of no more than a discretionary activity a more lenient activity status may be justified. In my evidence-in-chief and summary evidence (paras 6 and 7) I have proposed that buildings such as offices and industrial activities that the public is not invited to enter, and where the occupants are subject to the Health and Safety at Work Act 2015 and hence not require assistance to evacuate, should be identified as “Potentially-Hazard-Sensitive” and be accorded restricted discretionary activity status.

That approach seems entirely consistent with the opportunity for flexibility provided for in the MfE guidance. The Operative Kapiti Coast District Plan has created a separate higher risk category for buildings where there is a potential for crowds (discretionary activity) while lower risk offices and industrial buildings in the same fault complexity area are a restricted discretionary activity.

26. Because the PDP has not followed the MfE guidance in respect of developed land on or close to active faults this has given rise to some significant differences in activity status. For instance, whereas the PDP has “residential units” identified as “hazard sensitive” and therefore a non-complying activity in the high hazard areas, the MfE guidance provides for light timber framed single storey dwellings on developed sites as a permitted activity. (Table 11.2 Appendix 7)
27. In my opinion by combining all natural hazards (flooding, tsunami, coastal erosion, coastal inundation and fault rupture) into one omnibus set of land use activities the PDP has created some major anomalies. Whereas it is appropriate to accord non-complying activity status to a dwelling or light timber framed building in the coastal erosion zone it is not appropriate, and is contrary to MfE guidance, to accord the same earthquake resistant building non-complying activity status on a developed or subdivided site in a fault rupture zone.
28. I note that the operative Kapiti Coast District Plan 2021 has separate policies and rules specific to earthquake hazards. The Kapiti approach also closely follows that set out in the MfE guidance using virtually the same building importance categories (with an additional category for buildings with crowds) and generally has more permissive resource consent activity status depending on fault complexity compared with the PDP. For instance, the commercial office building at 7 Heriot Drive and the industrial building at 15 Raiha Street would both be restricted discretionary activities in the equivalent “distributed” Ohariu fault complexity area of Kapiti whereas they are both non-complying activities under the PDP. Overall Kapiti has adopted a much more nuanced approach for dealing with natural hazards, particularly earthquake related hazards, than the “one size fits all” PDP approach to natural hazard management.

Rule NH-R6

29. Mr McDonnell (supplementary evidence para 36) has recommended the following amendments to NH-R6b:

“Any buildings and activities ~~are located~~ within the Pukerua Fault Avoidance Rupture Zone or the Ohariu Fault Avoidance Rupture Zone are located no closer than 20m from either fault-Fault Rupture Zone; side of either or

30. The recent amendments distinguish between a “Fault Avoidance Zone” and a “Fault Rupture Zone”. Without maps and a definition I am unable to determine from the PDP what differences there are between them.
31. Furthermore, although he has recommended (confusing) amendments to rule NH-R6 Mr McDonnell has not recommended corresponding changes to the wording in APP10 Table 3 “Natural Hazard Overlays”.
32. I joined day 1 of hearing stream 3 remotely and viewed Mc Donnell’s diagram of the Fault Rupture Zone and Fault Avoidance Zone. Unfortunately, the sound was muted for that part of his presentation so I could not hear his explanation of the distinction. However, I think he was explaining that his diagram is consistent with the terms as used by geotechnical experts. As Mr McDonnell stated earlier on day 1 in response to questions from commissioners his understanding of the terms was clarified by the expert conferencing of the geotechnical experts in respect of the Kenepuru Landing Properties Ltd.

Planning implications

33. I am mindful that the Ohariu fault rupture zone as mapped in the PDP, now recommended to be renamed “fault avoidance zone”, varies from 60 to 800m wide and traverses the length of Porirua. Moreover, it divides in two to cut across both the main CBD and important commercial/office/bulk retail/industrial areas. (refer Appendix 8 attached). Many scores of properties are adversely affected.
34. In accordance with rule NH-R8 the establishment of any Hazard-Sensitive Activity (such as residential units) or Potentiality-Hazard-Sensitive Activity (such as offices, commercial and industrial activities) or any addition of more than 20 square metres in this 60 to

800m wide band will require a non-complying resource consent. In my opinion, when so many properties are affected by such restrictive rules, the plan provisions need to be absolutely certain and clear to a lay person.

35. I have spent some hours attempting to make sense of the provisions as notified, including reference to supporting documents, and I am still not entirely clear. For instance, it was not until the Commissioner Chair on day 1 of this hearing stream suggested that the phrase “excluding 20m either side of the Ohariu Fault” in APP 10 Table 3 should be reworded “beyond 20m” that the provision started to make more sense to me. However, “beyond” creates the problem of how far “beyond” is the outer limit?
36. I remain uncertain as to the practical implications of the PDP provisions, both as notified and particularly as proposed to be amended, in respect of Heriot Drive Ltd and Raiha Properties Ltd. Any proposal to add an extension of more than 20 square metres (NH-R4 and NH-R8) or to change the activity to any of the listed Hazard-sensitive or Potentially-hazard-sensitive activities (NH-R8) will trigger the requirement for a non-complying resource consent. I find no guidance in the PDP as to the standard of evidence/ burden of proof required of an applicant necessary to obtain that consent. In contrast the Operative Kapiti Coast District Plan 2021 has clear standards.
37. I also remain concerned at the uncertainty created by the “low” hazard area for the Ohariu fault in APP10-Table 3. As an e-plan the main electronic access is by way of a property address which takes the user into the planning maps. Various layers can then be selected including natural hazards which brings up the pink fault rupture zone.
38. However, there is nothing on the planning map to alert the user that the fault rupture zone contains both a “high hazard area” subject to rule NH-R8 (non-complying activity) and a “low” hazard area where rule NH-R6 (restricted discretionary) applies. There is no line or different coloured band to alert the user to this distinction. This “low” hazard area seems to be the only mapped natural hazard in the PDP that does not have a mapped line. I am unable to determine from APP 10 Table 3 or the planning maps which part of the Ohariu Fault Rupture Zone is a low hazard area, where that low hazard area is in relation to the fault rupture zone (is it inside it or alongside it?) nor the extent of it (width and length). Since a fault rupture zone cannot be simultaneously a “high hazard

area” and a “low hazard area” part of the fault rupture zone must be low hazard. But which part?

Uncertainty, natural justice and scope

39. I consider the construction and interpretation of the Fault Rupture Zone as I describe in paragraph 27 and as shown in Appendix 1 of my evidence-in-chief is entirely reasonable and one a layperson could arrive at especially if they referred to the council GIS hazard maps. I accept the GIS maps are not part of the PDP but the single fault line (was) public information, readily accessible electronically and in all respects the fault rupture zone on those maps seems identical (including in pink colour) to the PDP. I think it conceivable that others did as I did and turned to the council GIS hazard maps to try to make sense of the PDP.
40. The map construction of the fault provisions shown as Appendix 1 in my evidence-in-chief was the position I arrived at when I first reviewed the PDP and was asked to assist with drafting the submissions of Heriot Drive Ltd and Raiha Properties Ltd. I concluded then, as I still do, that interpreted as I have, the provisions barely affected those properties and hence those submissions were not as broad as they should, in hindsight, have been.
41. I think it is reasonable to assume other property owners similarly interpreted the PDP fault rupture provisions as I did and accordingly did not submit on them or alternatively simply did not understand these complex and convoluted plan provisions and the effect of them. I can think of no other explanation why the very restrictive fault rupture provisions which adversely affect so many properties have attracted so few submissions.
42. It was only when I received the s42A report and Mr McDonnell’s subsequent supplementary evidence that I realised that the council intended the fault rupture provisions to be interpreted in an entirely different way.
43. Given the very poor and confusing drafting of the PDP fault rupture provisions and the restrictive nature of the rules I consider there may be issues of natural justice, and certainly of scope, to try to fix the issues through the council’s right of reply.

Conclusions

44. In my opinion the natural hazard provisions of the PDP and the reporting officer's recommendations:
1. Incorrectly apply the MfE guidance in that no distinction is made between "greenfields" and developed land;
 2. Do not have regard to the GNS recommendation that for the southern half of the Ohariu fault rupture zone, where the fault complexity is assessed as "uncertain-constrained", consistent with the MfE guidance it should be viewed as "distributed". Accordingly, in applying the MfE guidance the PDP has adopted an overly restrictive consent activity status (eg non-complying instead of discretionary for commercial and industrial activities);
 3. Has not considered applying the lesser consent activity status discretion provided for in the MfE guidance;
 4. Do not define the extent of the "low" hazard area of the Ohariu Fault rupture zone;
 5. Lead to a reasonable and logical interpretation of the notified PDP fault rupture provisions as shown in the appendix attached to my evidence-in-chief;
 6. That when compared with the operative Kapiti Coast District Plan 2021 are inconsistent with the objectives of the Greater Wellington Regional Council Natural Hazard Management Strategy 2017 to use consistent methodologies and to have consistent objectives, policies, methods and rules;
 7. Overall the provisions, both as notified and as recommended to be amended, are uncertain and internally inconsistent.
45. These major shortcomings are compounded by the limited number of submissions (which I find surprising) and the narrow range of scope within those few submissions available to correct the above listed shortcomings.
46. In my view the fault rupture/fault avoidance provisions of the PDP should be withdrawn in their entirety and dealt with by way of a subsequent variation. In my view such variation should more closely follow the MfE guidance. That would improve consistency with the Kapiti Coast District Plan 2021 and in turn give effect to the Greater Wellington Regional Natural Hazard Strategy 2017.



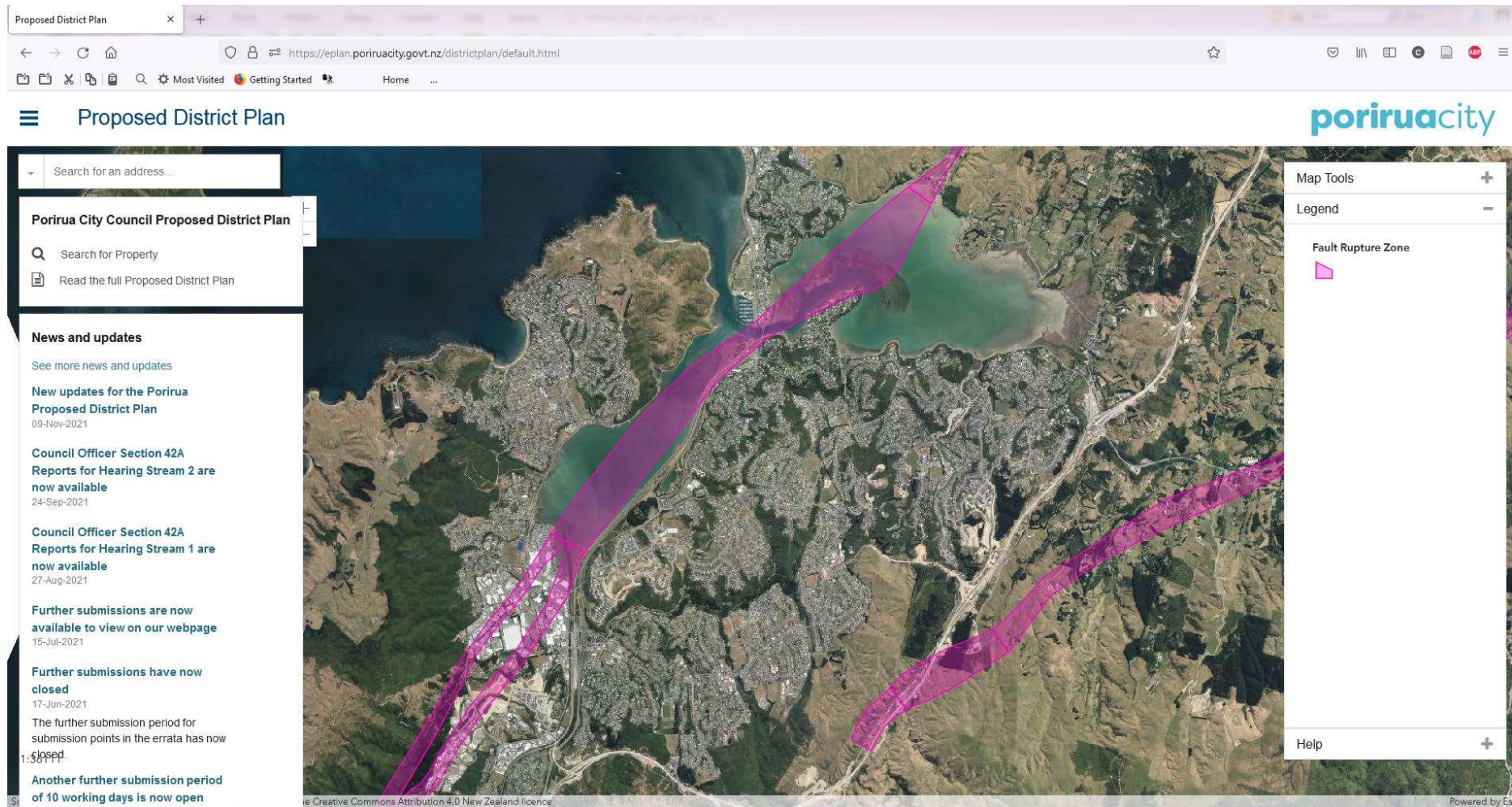
Figure 2 Fault Avoidance Zones for the southern half of the Ohariu Fault in Porirua District. B is Brown's Bay, I is Ivey Bay and M is Moorehouse Point.

Appendix 1 Figure 2 page 14 from GNS 2014 showing fault complexity in the southern part of Ohariu Fault

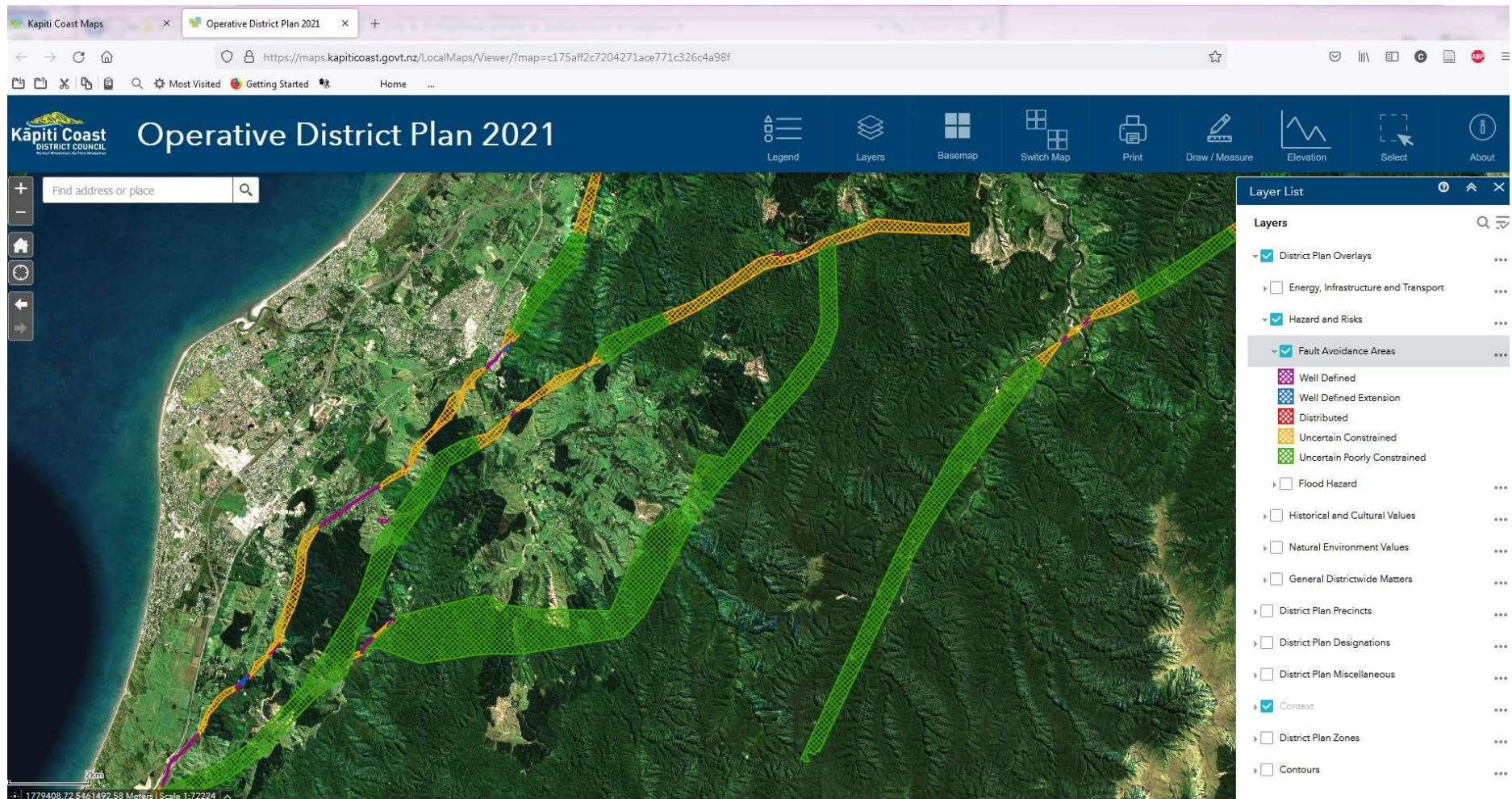


Figure 3 Fault Avoidance Zones for the northern half of the Ohariu Fault in Portrua District.

Appendix 1A Figure 3 page 15 from GNS 2014 showing fault complexity in the northern part of Ohariu Fault



Appendix 2 Screenshot of part of the PDP Fault Rupture Zone through Porirua. The PDP does not include the GNS fault complexity assessments



Appendix 3 Kapiti Coast Operative District Plan 2021 Fault Avoidance Zones. The planning maps include fault complexity as assessed by GNS.

Table 9.1: Building Importance Categories: a modified version of New Zealand Loading Standard classifications

Building Importance Category (BIC)	Description	Examples
1	Structures presenting a low degree of hazard to life and other property	Structures with a total floor area of less than 30m ² Farm buildings, isolated structures, towers in rural situations Fences, masts, walls, in-ground swimming pools
2a	Residential timber-framed construction	Timber framed single-story dwellings
2b	Normal structures and structures not in other categories	Timber framed houses of plan area of more than 300 m ² Houses outside the scope of NZS 3604 "Timber Framed Buildings" Multi-occupancy residential, commercial (including shops), industrial, office and retailing buildings designed to accommodate less than 5000 people and also those less than 10,000 m ² gross area. Public assembly buildings, theatres and cinemas of less than 1000 m ² Car parking buildings
3	Structures that, as a whole, may contain people in crowds or contents of high value to the community or pose risks to people in crowds	Emergency medical and other emergency facilities not designated as post disaster facilities Buildings where more than 300 people can congregate in one area Buildings and facilities with primary school, secondary school or day care facilities with capacity greater than 250 Buildings and facilities with capacity greater than 500 for colleges or adult education facilities Health care facilities with a capacity of 50 or more residents but not having surgery or emergency treatment facilities Airport terminals, principal railway stations, with a capacity of more than 250 people Any occupancy with an occupancy load greater than 5000 Power generating facilities, water treatment and waste water treatment facilities and other public utilities not included in Importance Category 4 Buildings and facilities not included in Importance Category 4 containing hazardous materials capable of causing hazardous conditions that do not extend beyond the property boundaries
4	Structures with special post disaster functions	Buildings and facilities designated as essential facilities Buildings and facilities with special post-disaster function Medical emergency or surgical facilities Emergency service facilities such as fire, police stations and emergency vehicle garages Utilities required as backup for buildings and facilities of importance level 4 Designated emergency shelters Designated emergency centres and ancillary facilities Buildings and facilities containing hazardous materials capable of causing hazardous conditions that extend beyond the property boundaries.

Table 9.2: Relationship between fault recurrence interval and Building Importance Category

Recurrence interval class	Fault recurrence interval	Building importance category (BIC) limitations* (allowable buildings)	
		Previously subdivided or developed sites	“Greenfield” sites
I	≤2000 years	BIC 1	BIC 1
II	>2000 years to ≤3500 years	BIC 1 and 2a	
III	>3500 years to ≤5000 years	BIC 1, 2a and 2b	BIC 1 and 2a
IV	>5000 years to ≤10,000 years	BIC 1, 2a, 2b and 3	BIC 1, 2a, and 2b
V	>10,000 years to ≤20,000 years		BIC 1, 2a, 2b and 3
VI	>20,000 years to ≤125,000 years	BI Category 1, 2a, 2b, 3 and 4	

Note: Faults with average recurrence intervals >125,000 years are not considered active.

Appendix 5 Table 9.2 of MfE guidance 2003

Table 11.1: Resource consent activity status for greenfield sites

Building importance category	1	2a	2b	3	4
Fault complexity	Activity status				
<i>Fault recurrence interval class I less than or equal to 2000 years</i>					
A – Well defined	Permitted	<i>Non-complying</i>	<i>Non-complying</i>	<i>Non-complying</i>	Prohibited
B – Distributed	Permitted	<i>Discretionary</i>	<i>Non-complying</i>	<i>Non-complying</i>	Non-complying
C – Uncertain [†]	Permitted	<i>Discretionary</i>	<i>Non-complying</i>	<i>Non-complying</i>	Non-complying
<i>Fault recurrence interval class II greater than 2000 but less than or equal to 3500 years</i>					
A – Well defined	Permitted	<i>Non-complying</i>	<i>Non-complying</i>	<i>Non-complying</i>	Prohibited
B – Distributed	Permitted	<i>Discretionary</i>	<i>Non-complying</i>	<i>Non-complying</i>	Non-complying
C – Uncertain [†]	Permitted	<i>Discretionary</i>	<i>Non-complying</i>	<i>Non-complying</i>	Non-complying
<i>Fault recurrence interval class III greater than 3500 to but less than or equal to 5000 years</i>					
A – Well defined	Permitted	Permitted*	<i>Non-complying</i>	<i>Non-complying</i>	Non-complying
B – Distributed	Permitted	Permitted	<i>Discretionary</i>	<i>Discretionary</i>	Non-complying
C – Uncertain [†]	Permitted	Permitted	<i>Discretionary</i>	<i>Discretionary</i>	Non-complying
<i>Fault recurrence interval class IV greater than 5000 but less than or equal to 10,000 years</i>					
A – Well defined	Permitted	Permitted*	Permitted*	<i>Non-complying</i>	Non-complying
B – Distributed	Permitted	Permitted	Permitted	<i>Discretionary</i>	Non-complying
C – Uncertain [†]	Permitted	Permitted	Permitted	<i>Discretionary</i>	Non-complying
<i>Fault recurrence interval class V greater than 10,000 but less than or equal to 20,000 years</i>					
A – Well defined	Permitted	Permitted*	Permitted*	Permitted*	Non-complying
B – Distributed	Permitted	Permitted	Permitted	Permitted	Non-complying
C – Uncertain [†]	Permitted	Permitted	Permitted	Permitted	Non-complying
<i>Fault recurrence interval class VI greater than 20,000 but less than or equal to 125,000 years</i>					
A – Well defined	Permitted	Permitted*	Permitted*	Permitted*	Permitted*
B – Distributed	Permitted	Permitted	Permitted	Permitted	Permitted**
C – Uncertain [†]	Permitted	Permitted	Permitted	Permitted	Permitted**

Note: Faults with a recurrence interval of greater than 125,000 years are not considered active.

* The activity status is permitted, but could be controlled or discretionary because the fault location is well defined.

** Although the activity status is permitted, care should be taken in locating BIC 4 structures on or near known active faults. Controlled or discretionary activity status may be more suitable.

† Where the fault trace is uncertain, specific fault studies may provide more certainty on the location of the fault. Moving the fault into the distributed or well defined category would allow a reclassification of the activity status and fewer assessment criteria.

Italics show that the activity status is more flexible. For example, where *discretionary* is indicated, controlled activity status may be considered more suitable.

Appendix 6 Table 11.1 of MfE guidance 2003 - Greenfields sites

Table 11.2: Resource consent activity status for developed and already subdivided sites

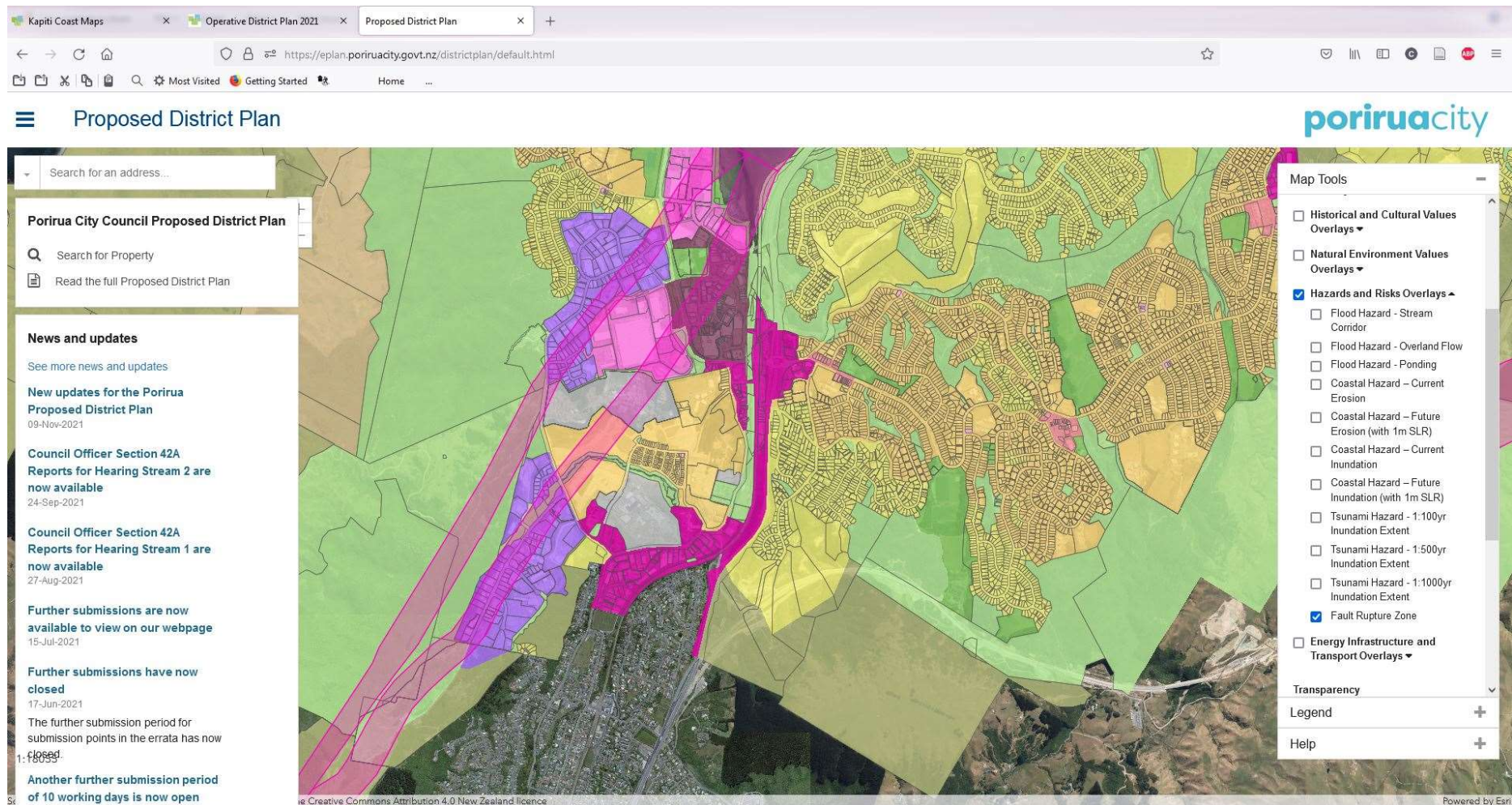
Building importance category	1	2a	<u>2b</u>	3	4
Fault complexity	Activity status				
Recurrence interval class I less than or equal to 2000 years					
A – Well defined	Permitted	<i>Non-complying</i>	<i>Non-complying</i>	<i>Non-complying</i>	<i>Non-complying</i>
B – Distributed	Permitted	<i>Discretionary</i>	<i>Non-complying</i>	<i>Non-complying</i>	<i>Non-complying</i>
C – Uncertain †	Permitted	<i>Discretionary</i>	<i>Non-complying</i>	<i>Non-complying</i>	<i>Non-complying</i>
Recurrence interval class II greater 2000 but less than or equal to 3500 years					
A – Well defined	Permitted	Permitted*	<i>Non-complying</i>	<i>Non-complying</i>	<i>Non-complying</i>
B – Distributed	Permitted	Permitted	<i>Discretionary</i>	<i>Non-complying</i>	<i>Non-complying</i>
C – Uncertain †	Permitted	Permitted	<i>Discretionary</i>	<i>Non-complying</i>	<i>Non-complying</i>
Recurrence interval class III greater than 3500 but less than or equal to 5000 years					
A – Well defined	Permitted	Permitted*	Permitted*	<i>Non-complying</i>	<i>Non-complying</i>
B – Distributed	Permitted	Permitted	Permitted	<i>Discretionary</i>	<i>Non-complying</i>
C – Uncertain †	Permitted	Permitted	Permitted	<i>Discretionary</i>	<i>Non-complying</i>
Recurrence interval class IV greater than 5000 but less than or equal to 10,000 years					
A – Well defined	Permitted	Permitted*	Permitted*	Permitted*	<i>Non-complying</i>
B – Distributed	Permitted	Permitted	Permitted	Permitted	<i>Non-complying</i>
C – Uncertain †	Permitted	Permitted	Permitted	Permitted	<i>Non-complying</i>
Recurrence interval class V greater than 10,000 but less than or equal to 20,000 years					
A – Well defined	Permitted	Permitted*	Permitted*	Permitted*	<i>Non-complying</i>
B – Distributed	Permitted	Permitted	Permitted	Permitted	<i>Non-complying</i>
C – Uncertain †	Permitted	Permitted	Permitted	Permitted	<i>Non-complying</i>
Fault recurrence interval class VI greater than 20,000 but less than or equal to 125,000 years					
A – Well defined	Permitted	Permitted*	Permitted*	Permitted*	Permitted*
B – Distributed	Permitted	Permitted	Permitted	Permitted	Permitted**
C – Uncertain †	Permitted	Permitted	Permitted	Permitted	Permitted**

Note: Faults with a recurrence interval of greater than 125,000 years are not considered active.

- * The activity status is permitted, but could be controlled or discretionary because the fault location is well defined.
- ** Although the activity status is permitted, care should be taken in locating BIC 4 structures on or near known active faults. Controlled or discretionary activity status may be more suitable.
- † Where the fault trace is Uncertain, specific fault studies may provide more certainty on the location of the fault. Moving the fault into the Distributed or Well Defined category would allow a reclassification of the activity status and fewer assessment criteria.

Italics – show that the activity status is more flexible. For example, where *discretionary* is indicated, controlled activity status may be considered more suitable.

Appendix 7 Table 11.2 of MfE guidance 2003 - developed and already subdivided sites



Appendix 8 PDP – Ohariu Fault Rupture Zone (hatched pink) and its relationship to inner industrial areas (pale purple) commercial areas (pink) and the CBD (grey)