

PC41 DEVELOPMENT – SUMMARY OF COUNCIL APPROACH AS IT RELATES TO THE 2003 GUIDANCE

EVIDENCE OF AIDAN CAMPBELL SMITH, SENIOR POLICY ADVISOR, TAUPO DISTRICT COUNCIL

Qualifications

1. My full name is Aidan Campbell Smith, and I am a Senior Policy Advisor in the Policy team at Taupō District Council (TDC). I have held this role for 2 years.
2. I hold the qualification of Bachelor of Arts in Economics from Victoria University of Wellington.
3. I have fifteen years of government policy analysis and advice experience in central and local government, including policy and strategy development, regulatory intervention options assessment, and project management.
4. I have lead the review of the fault hazard information contained in the Taupo District Plan (TDP). This has included: commissioning GNS Science – Te Pu Ao to provide updated fault hazard information for the Taupo District; providing advice to Council on its statutory requirements; and recommending how TDC should use this new information. As part of this process I notified and discussed the information with potentially affected property owners, and updated Land Information Memorandum (LIM) information. I have also provided advice and support to the consultant planners who developed PC41.
5. I have read and am familiar with the Environment Court's Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2023, and agree to comply with it. My qualifications as an expert are set out above. Other than where I state that I am relying on the advice of another person, I confirm that the issues addressed in this statement of evidence are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Evidence

6. The following sets out the approach taken by TDC in considering the best approach to manage the risk posed by fault lines within the Taupo District.

New Mapping and report provided by GNS Science – Te Pu Ao in 2020

7. In 2020, I reviewed the fault hazard information currently mapped within the TDP. This was done to ensure that TDC was appropriately mitigating the risks posed by earthquake faults. The current fault information in the TDP is thought to be from 1998 and reflect the information in GNS's New Zealand Active Faults Database at that time. I identified that TDP's fault maps – were out of date with modern fault line mapping practices and did not adequately reflect the uncertainty of fault location or possible area of ground deformation. I understand that the current fault line data was inaccurate due to the mapping approach of using pencil thin lines to map the fault lines and applying a 20m avoidance zone through our District Plan. However, due to the uncertainty associated with this initial data, the fault line hazard area may be 60m or wider, and due to mapping simplification, and manual mapping transfers, the actual fault may be up to 200m from the indicated line. This uncertainty in fault location and discrepancy in our planning framework was identified through on-site assessments done by GNS science to support specific resource consent applications.
8. I commissioned GNS Science – Te Pu Ao, as technical experts in this area, to provide new active fault mapping and an accompanying report. The purposes of this research were that TDC could

use it to inform a review of fault line data in the District Plan. The final report was received in August 2020; Active fault hazards in the Taupō District (GNS 2020).

9. Instead of the previous pencil thin fault lines, GNS 2020 used current practice, developed as best practice and in line with the 2003¹ MfE (MfE 2003) guidance, of identifying:
 - Fault avoidance zones: These are bands created by establishing a 20 m buffer (setback) zone either side of the identified possible fault rupture zone of an identified or suspected active fault. These are often 60 – 80 meters wide, depending on the width of the identified deformation area, plus an allowance for mapping uncertainty, plus the setback on each side. Fault avoidance zones were identified using LiDAR (Light Detection and Ranging) topography data that can be used to accurately identify and maps potential fault deformation areas. Taupō District Council had LiDAR data for only its urban areas available at the time.
 - Fault Awareness Areas: These are large wide bands, often 250 to 500 meters wide, which identify that an active fault is known, or suspected, to be present, but existing mapping is not accurate enough to be sure of its exact location. These are applied in the rural areas, where LiDAR data was not available to more accurately locate and map suspected faults.

Council's response to the new fault mapping

10. In developing TDC's response to GNS 2020 TDC followed the 2003 guidance. This included ensuring that the fault line mapping, in GNS 2020, was done in accordance with the guidance in MfE 2003. MfE 2003 also informed the process that TDC adopted to address the risk posed by fault lines in the Taupō District.
11. The main objective of the councils response was to ensure that new development was aware of and avoids hazard areas. This was done using two key methods:
 - The TDP requires structure planning for any new areas that are to be developed for urban land uses. The structure planning process for the Taupo District is set out in section 3e.7 of the TDP. Section 3e.7 specifically requires the consideration of hazards and land suitability including earthquake faults. Section 3e.7 is applied along with the objectives and policies in section 3L.2.1 and has an objective of the protection of activities, development and life from the adverse effects of natural hazards.
 - The second method TDC has for new development is using Section 106 of the Resource Management Act (RMA). Section 106 gives TDC the power to refuse or impose conditions on a subdivision consent if TDC considers that there is a risk from natural hazards. That response will respond to the characteristics of the development and its location in respect to the fault line but it does give TDC the ability to turn down applications. Section 106 allows TDC to use any information, or maps that the council has, including those sitting outside of the District Plan.
12. These two key methods give TDC the ability to prevent the establishment of new urban areas and subdivision in fault hazard areas. This approach is consistent with the guidance in MfE 2003.
13. I do note however, that this approach may not capture discrete land uses and development within rural zoned land. The TDP is a reasonably permissible district plan, for development in rural areas. It is reasonable to expect a range of development including industrial development, such

¹ **MfE 2003** - Kerr J, Nathan S, Van Dissen RJ, Webb P, Brusndan D, King AB. 2003. Planning for development of land on or close to active faults: a guideline to assist resource management planners in New Zealand. Lower Hutt (NZ): GNS Science. Client Report 2002/124

as a milk processing plant, or a power plant, or facilities using second hand geothermal heat, next to a power plant in the rural area. Given that the Taupō District is also a tourist destination, and there is potential for accommodation or lodges in the rural environment where there might be fault hazards.

14. In these situations TDC has two main controls in place as follows:

- Any development of significance is likely to require a resource consent, and that gives TDC the power to consider hazard risks when applying the provisions of Section 3L.2 of the TDP. Those risks do not have to be mapped in the plan to be considered.
- Building Act controls will also be applied to all proposed buildings which require engineering consideration for anything above building importance level 2². Fault line information will be set out on the project information memorandum (PIM). The building applicant will either need to obtain a PIM to support their building consent application otherwise TDC will generate one when considering any building consent application. Also all projects in rural zoned areas are required to get a geotechnical assessment done to confirm the suitability of the building platform. That assessment will have to address any known fault hazard areas.

15. There is a residual risk of individual houses or buildings, being developed on sites that are already subdivided. Most such dwellings are permitted activities under the TDP. TDC can still ensure that these developments avoid fault areas through Building Act controls. This is done through the application of NZS3604 which is the acceptable engineering solution for a standard timber frame house. Amendment 19 to the Acceptable Solutions and Verification Methods for Clause B1 Structure of the New Zealand Building Code (NZS3604), amended the definition of good ground to exclude “any ground which could foreseeably experience movement of 25 mm or greater for any reason....” This part of the amendment came into effect nationwide on 29 November 2021. TDC will not accept houses or buildings in a fault hazard area, because the requirement of ‘good ground’ in that standard is not met. That means that engineering consideration is needed to address ground issues which will include any identified fault lines. Through that process the developer will need to provide assurance to TDC that the site is safe, or professionally assess and adjust the hazard area, or avoid the area. The outcome sought and the associated assessment required is consistent with the TDP rules that are proposed to be removed from the TDP via PC41. This approach is consistent with the guidance also.

16. In the Rural Environment, where fault hazard areas are not mapped in detail TDC has the wide fault awareness areas. Geotech is required as standard practice to ensure a suitable building platform in these areas to meet the Building Act. The fault awareness areas identified in GNS 2020 will be noted in the project information memorandum (PIM). A Geotech assessment will be expected to identify if the building site is suitable given the potential for a fault to be in the area.

17. One of the key advantages of using Building Act mechanisms over the TDP is in relation to existing dwellings. When TDC mapped the fault lines identified in GNS 2020, over two hundred houses were identified as being located in fault avoidance zones. Under the RMA those houses have existing use rights, so wouldn’t need consent to rebuild or make minor alterations, or structural renovations, such as taking out a wall to go open plan. Under the Building Act, TDC can require engineering design for any structural building alterations.

18. In addition to the above, TDC has got the most up to date fault mapping (GNS 2020) on Land Information Memoranda (LIM). This means that prospective buyers are aware of the presence of

² Building importance level 2 is defined in the building code (Building Regulations 1992, Schedule 1) as: “Buildings posing normal risk to human life or the environment, or a normal economic cost, should the building fail. These are typical residential, commercial, and industrial buildings.”

the fault line of any property that is affected. . In developing PC41 it was identified that that under current law, once hazard maps are in the TDP then they are not required to be on LIMs. Removing them from LIMs increases the risk to new buyers who may not check the District Plan prior to purchase.

19. I am confident that the following processes and tools, currently in place, are suitable to stop new development in fault hazard areas as well as controlling development of existing buildings:

- The Structure Plan process set out in section 3e.7 of the TDP.
- Section 106 of the RMA
- The Objectives and Policies in Section 3L of the TDP.
- The Building Act PIM process.
- Building Act requirements for geotechnical assessments on building platforms.
- NZS3604 requirements for timber framed houses to be built on 'good ground'.
- Building Act requirements for requiring engineering design for any structural building alterations to existing buildings.
- Local Government Official Information and Meetings Act LIM process

20. In the development of PC41, we considered whether we should duplicate those existing tools by also having rules in the TDP. On review it was considered that the tools set out above adequately covered the risk posed by the presence of fault lines and there would be no additional benefit in mapping the GNS2020 data in the TDP.

21. In addition, we also foresaw a real risk were we to include fault maps and associated planning rules in the TDP. The risk is that once fault lines are included in the TDP then they cannot be readily updated. Were new fault mapping, or refinements, to be provided to Council, we would then have two separate maps with differing information instead of a single source of the truth. This presents a risk of people being unaware of the location of fault lines. During the review of the old fault data, I saw evidence of instances of the identification of new fault mapping being missed during future building proposals because the TDP maps had not been updated. The older and updated information were still used as the basis for regulatory controls.

22. Using the controls Council has identified, and including the latest data as information layers on the TDP maps, means that Council can keep the fault maps live, and update them should it receive new information. That way current maps, as a single source of the truth, will support appropriate information for property owners, and potential buyers, and for regulatory controls.

Aidan Smith
Taupō District Council
27 June 2023