

**Before the Hearings Panel
at Porirua City Council**

Under Schedule 1 of the Resource Management Act 1991

In the matter of the Proposed Porirua District Plan

Between **Various**

Submitters

And **Porirua City Council**

Respondent

**Hearing Presentation Summary of David Allen Sullivan on behalf of
Kenepuru Limited Partnership**

Date: 7 December 2021

INTRODUCTION

- 1 My full name is David Allen Sullivan. My qualifications are as presented in my Statement of Evidence dated 19 November 2021

SUMMARY OF PRESENTATION

- 2 The Kenepuru Limited Partnership and/or Porirua City Council has had experts involved in assessing the fault zones at various stages since 2016 and has included robust peer review. The experts that have been involved are:

- 2.1 David Sullivan – Principal, Tetra Tech Coffey
- 2.2 Dick Beetham (now deceased) – Principal, Tetra Tech Coffey (formerly GNS Science)
- 2.3 Nick Clendon – Principal, Tetra Tech Coffey
- 2.4 John Begg – Owner, J Begg Geo (formerly GNS Science) – 3rd Party Peer Review
- 2.5 Doug Mason – Senior Engineering Geologist, WSP (Peer Review on behalf of Porirua City Council)

- 3 From discussion between the experts presented in Item 2 above, the latest Kenepuru Subdivision – Fault Trench Investigation Assessment Report dated 26 May 2021 was presented. The zone agreed on was the area is shown as the purple/dark blue hatched area in Figure 1b of Joint Witness Statement (JWS) 1 December 2021 and reproduced below.

- 4 From presentation by Dr Litchfield on 3 December 2021, I would like to discuss the following items, which we disagree on as presented in our JWS:

- 4.1 Area A (Figure 1b of JWS). I believe this area to be of negligible risk of rupture. This is due to:
 - Evidence of rupture was not observed in our trenches 11A and 11B in this weathered rock area.
 - This was the most undisturbed portion of the site, allowing good observation from LiDAR, surface observation, and the fault trenching.

- The shape of the topography indicates that the fault location is at a similar location at Area A as assessed from our fault trenches 11A and 11B.
- This was assessed by the team of experts presented in Item 2 above.
- Due to these items, there is negligible risk that deformation would be observed within Area A during a fault rupture.
- I recommended that the Panel utilise the hatched zone to define this south-eastern side of the FAZ. This will mean that the FAZ will need to have a significant step / necking at Raiha Street.

4.2 Geophysical Anomaly C – Point B (Figure 1B in JWS). I believe this area to be of low risk. This is due to:

- Geophysical Anomaly C showing a step in the wave velocity that travels through the ground during the test.
- We purposely placed a fault investigation trench (FT02) directly above this area of geophysical anomaly. This area was in previous historic earthworks cut and the gravel imbrication (layering as a stream deposits gravel material) did not show disturbance or evidence of rupture.
- Geophysical Anomaly C (Point B) is assessed as being an ancient edge of the Mitchell Stream as it meandered back and forth across this area.
- As risk of rupture could not be fully ruled out, it was agreed to provide a 'Zone of Distributed Deformation' for this area. Zone of Distributed Deformation was defined as an area that has sufficient low risk of rupture, but there could be minor ground deformation due to strain from the assessed kink in the fault zone (as shown in Figure 1b in JWS). This Zone of Distributed Deformation allows an engineered solution to be adopted in this area.

- This was assessed by the team of experts presented in Item 2 above.
- Due to these items, I assess there is low risk for surface rupture at Geophysical Anomaly C (Point B).
- I recommended that the Panel utilise the hatched zone to define the north-western side of the FAZ. As the Zone of Distributed Deformation does not fit in within the definition of the FAZ it is suggested that the Panel consider a specific note on the Planning Maps for this area.

Date: [7/12/2021]

A handwritten signature in blue ink, appearing to read 'D. J. E.', is located below the date.

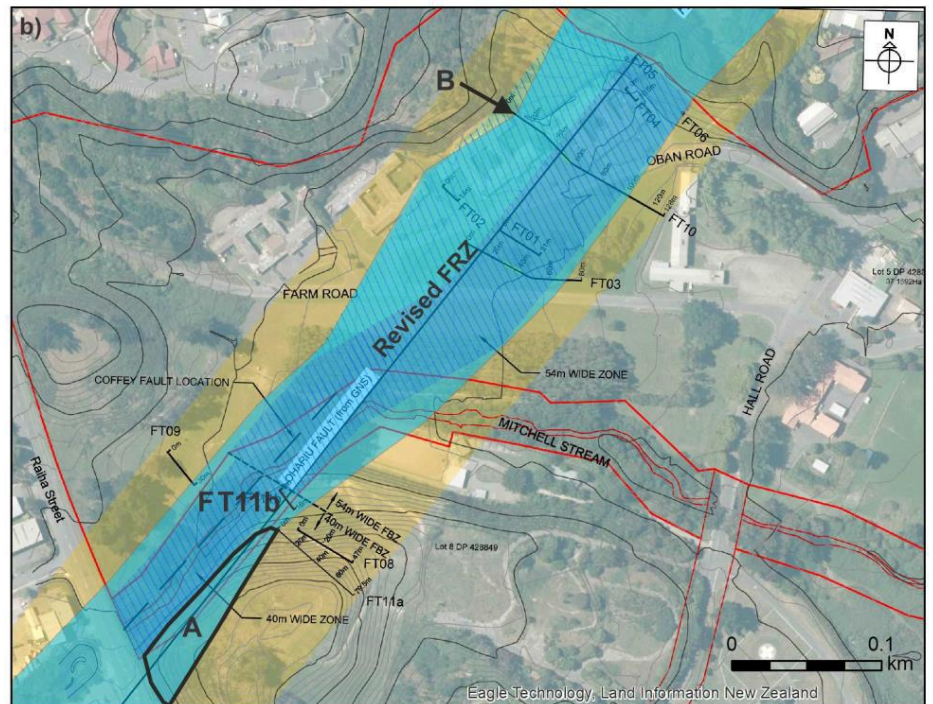
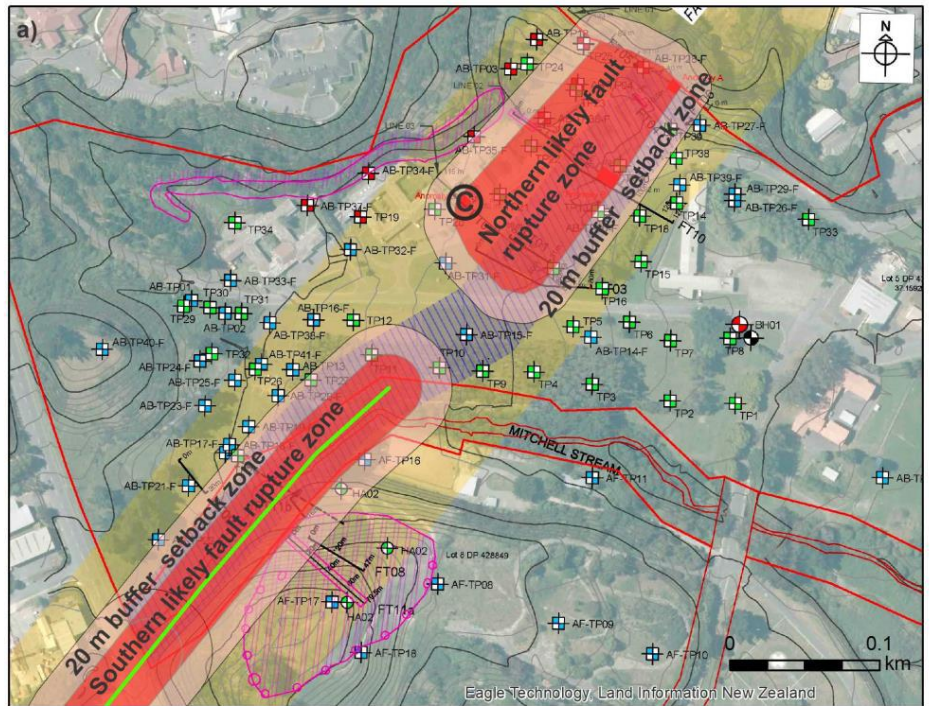


Figure 1a (top figure) Map of the revised FRZ through the KLP site discussed during the conferencing. Adapted from Dr Litchfield Expert Evidence

Figure 1b (bottom figure)

A - Components of the revised FRZ developed from the Coffey data.

B - Revised FRZ showing one agreed change at point B. Further examination of data at area A and anomaly C (shown on 1a) could result in further changes