

**BEFORE THE HEARING PANEL APPOINTED BY KAIPARA DISTRICT COUNCIL**

**Under the** Resource Management Act 1991 (RMA)

**In the matter** of Private Plan Change 85 (Mangawhai East) to the Kaipara District Plan

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**SUPPLEMENTARY STATEMENT OF EVIDENCE OF CALLUM BERNARD SANDS**

**Geotechnical**

**23 January 2026**

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## **1. INTRODUCTION**

- 1.1** My full name is Callum Bernard Sands.
- 1.2** I prepared a statement of evidence dated 1 December 2025 on behalf of Kaipara District Council (**Council**) in relation to the application by Foundry Group Limited and Pro Land Matters Company (**Applicant**) for a private plan change to rezone land in Mangawhai East (**PPC85**). I refer to my qualifications and experience in my original statement of evidence and do not repeat them here.
- 1.3** Although this matter is not being heard by the Environment Court, I confirm that I have read and am familiar with the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2023 and I agree to comply with it.
- 1.4** I am authorised to make this statement on behalf of the Council.

## **2. SCOPE OF EVIDENCE**

- 2.1** Since I prepared my statement of evidence, the Government has made the National Policy Statement for Natural Hazards 2025 (**NPS-NH**). I understand that the NPS-NH came into effect on 15 January 2026.
- 2.2** The purpose of this supplementary statement is to provide an update to my evidence-in-chief in relation to the NPS-NH and how it impacts PPC85, specifically I:
  - (a) Provide a risk based assessment in compliance with Part 3, 3.2(1) and 3.2(2) of the NPS-NH, based on the evidence provided to me at the time of drafting this statement.
- 2.3** The evidence used in forming my risk assessment herein is as stated in my original statement of evidence and the statement of evidence prepared by Andrew Pomfret dated 18 December 2025.

**2.4** As defined in the Part 1, 1.3(1) of the NPS-NH, and within the bounds of my area of expertise, this risk assessment has been undertaken for the following natural hazards:

- (a) Landslips, and
- (b) Liquefaction.

### **3. LIQUEFACTION RISK ASSESSMENT**

**3.1** My assessment has been formed on the basis that future development within the plan change adopt those recommendations outlined in the Initia Report, and are applicable to all low-lying areas of the PPC85 area, as indicated by Andrew Pomfret in his submittal. This comprising the use of TC2 foundations systems.

**3.2** The likelihood, annual exceedance probability (AEP) for various limit state liquefaction events, adopted in this risk assessment has been based on those reported in the Initia Report, and in alignments with those presented in Table of the Ministry of Business, Innovation and Employment (MBIE) Module 1: Earthquake geotechnical engineering practice documents.

**3.3** My consequence assessment has been informed by the predicted deformation outlined in the Initial Report.

**3.4** Liquefaction may be triggered by a range of seismic events, each associated with different annual exceedance probabilities (**AEP**). For the purposes of the NPS-NH assessment, I have evaluated two hazard levels:

- (a) Serviceability Limit State (**SLS**), and
- (b) Ultimate Limit State (**ULS**).

#### **Likelihood & Consequence**

**3.5** Following Table 1 and 2 of the NPS-NH, the likelihood of a liquefaction triggering event at the SLS is assessed as *Likely*, and the associated consequence is assessed as *Negligible*.

**3.6** Following Table 1 and 2 of the NPS-NH, the likelihood of a liquefaction triggering event at the ULS is assessed as *Unlikely*, and the associated consequence is assessed as *Moderate*.

### **Risk Assignment**

**3.7** With reference to Figure 1 of the NPS-NH, and based on the likelihood and consequence assessments above, the corresponding risk categories are:

- (a) The risk of material damage to land and buildings under an SLS event is *Low*; and
- (b) The risk of material damage to land and buildings under a ULS event is *Medium*.

## **4. LANDSLIPS RISK ASSESSMENT**

**4.1** It is noted that landslip natural hazards broadly apply to the area south of Black Swamp Road (southern area) only.

**4.2** My assessment has been formed on the basis that future development within the plan change adopt those recommendations outlined in the statement of evidence by Andrew Pomfret, relating to the southern area of the PC85 site. This comprising the engineered systems, such as *shear-keys*, or *other engineered structures*.

**4.3** A landslide (landslip) can occur at a range of scales and may be triggered by various mechanisms. For the purposes of this assessment, the following representative cases have been considered:

- (a) Normal groundwater conditions, potentially resulting in shallow surface movements such as soil creep;
- (b) Elevated groundwater conditions associated with high-intensity rainfall, potentially resulting in larger-scale landslips (e.g., debris flows, landslides,

or slumps), assessed using an AEP of 1/150-year (0.67%), representative of a major rainfall event; and

(c) Seismic shaking assessed using the AEP associated with an ULS seismic event.

**4.4** Separate consequence ratings have been applied to land zoned for low-density residential and large-lot residential development, to reflect the likely differences in earthworks scale, infrastructure, and development intensity between these typologies.

#### **Likelihood & Consequence**

**4.5** In accordance with Tables 1 and 2 of the NPS-NH:

(a) The likelihood of shallow surface movement is assessed as *Likely*; and

(b) The consequence for both low-density residential and large-lot residential development is assessed as *Negligible*.

**4.6** In accordance with Tables 1 and 2 of the NPS-NH, for larger-scale landslips:

(a) The likelihood is assessed as *Unlikely*; and

(b) The consequence is assessed as *Moderate* for low-density residential development, and *Minor* for large-lot residential development.

#### **Risk Assignment**

**4.7** With reference to Figure 1 of the NPS-NH, and based on the likelihood and consequence assessments above, the corresponding risk categories are considered to be:

(a) *Low* for large-lot residential development, and

(b) *Medium* for small-lot residential.

## 5. Conclusion

- 5.1** As outlined above, I have undertaken an assessment of the natural hazard risk for landslips and liquefaction arising from PPC85, in accordance with the risk matrix in the NPS-NH.
- 5.2** My assessment has been formed on the basis that future development within the plan change adopt those recommendations outlined in the statement of evidence by Andrew Pomfret, relating to the southern area of the PPC85 site.
- 5.3** Provided these recommendations are adopted, in my opinion there is no geo-technical related reason under the NPS-NH or more generally to decline re-zoning the site. I will address this further in my rebuttal evidence.

Callum Bernard Sands

23 January 2026