

## SUMMARY OF EVIDENCE

### Philip Ian Kelsey

1. My evidence provides an assessment of geotechnical feasibility of the 25 new house sites, on-site wastewater disposal and access roading for the proposed Structure Plan.
2. For this assessment, I have carried out a desktop review, field mapping (shown in **Figure 1** and **Figure 2** of my evidence), and supervised hand-auger bores for the project area.
3. Safe and stable building platforms exist for each of the house sites. Favourable stability conditions are provided by gentle slope angles, strong site soils and deep groundwater levels.
4. Twenty-one of the house sites have adequate setback distances from mapped landslides and potentially unstable steeper slopes. The Structure Plan allows for the remaining four sites to be moved if required once further geotechnical investigations are carried out at the subdivision scheme plan stage.
5. Aerial photographs show that since 1944 regenerating bush cover has significantly improved the stability of the steeper slopes both in the vicinity of the proposed house sites and within the wider site area. The protection of existing bush and new planting proposed by the Structure Plan will improve stability conditions and in turn run-off water quality in these areas.
6. The high strength soils on the hill country provide suitable ground conditions for conventional house foundations. Specific foundation design with the adoption of rib-raft floor slabs, or equivalent, will be required for the weaker alluvial soils on the stream terrace.
7. For the hill country, sufficient gently sloping land is available for on-site wastewater disposal at each house site. The Structure Plan requires best practice wastewater treatment and disposal to be carried out. Potential groundwater and surface water quality effects of wastewater disposal are addressed by:
  - (a) Primary and secondary treatment of wastewater followed by subsurface dripper irrigation within topsoil
  - (b) Plant uptake of nutrients.
  - (c) Renovation of effluent within the topsoil and partially saturated ground above the groundwater table.

8. Specific wastewater disposal design will be required for the stream terrace.
9. I have viewed the proposed accessway alignments. These are generally located on gently sloping ground that minimises earthworks. Some ground retention will be required for steeper areas. I consider the proposed accessways to be feasible.
10. In summary, based on the geotechnical investigations that I have carried out on-site, the land is suitable for the proposed 25 new house sites plus associated wastewater disposal areas and required accessways.