

Science Advice

Date	21 March 2024
To	Mackenzie District Council. Attn: Meg Justice (Partner – Taylor Planning)
CC	Rachel Tutty (Senior Planner – Environment Canterbury)
From	Nick Griffiths (Science Team Leader, Natural Hazards – Environment Canterbury)

Flood hazard overlay

Key Messages

The proposed Flood Hazard Assessment Overlay could be removed from the Tekapo Landco Ltd. and Godwit Leisure Ltd. property on the shores of Lake Tekapo, as requested in their submission on Proposed Plan Change 28 to the Mackenzie District Plan.

Introduction and Purpose

Tekapo Landco and Godwit Leisure have made a submission on Proposed Plan Change 28 to the Mackenzie District Plan. As part of this submission, they have requested that the proposed Flood Hazard Assessment Overlay be removed from their property (Lot 1 DP 455053) housing the Lakes Edge Holiday Park.

Mackenzie District Council have asked for our advice on this matter to assist their Section 42A report.

Data and analysis

The proposed Flood Hazard Assessment Overlay is based on mapping that we completed for Mackenzie District Council (Griffiths, 2023). In this location, the mapping was based around the maximum operating lake level (710.9 m LVD1937) with a reasonably conservative allowance of approximately 3 m for potential wind set up. LiDAR ground level data captured in 2016/2017 was used as a reference. In most places around the lake shore where flooding from other sources is unlikely, this meant the mapping did not extend onto privately owned property. However, a small portion of the Tekapo Landco Ltd. and Godwit Leisure Ltd. property is captured by the mapping.

A review of aerial imagery and Google Maps Street View imagery indicates that the property has been recontoured, and the small area captured by the mapping raised, since the LiDAR data was captured.

Interpretation

Given the reasonably conservative allowance of 3 m above the maximum operating lake level and that the property appears to have been raised since the data LiDAR data used for the mapping was captured, I consider that the likelihood of flooding from Lake Tekapo is very low. The proposed Flood Hazard Assessment Overlay could be amended to exclude the Tekapo Landco Ltd. and Godwit Leisure Ltd. property. Figure 1 shows how the overlay could be amended.



Figure 1: Proposed Flood Hazard Assessment Overlay (top) and amended mapping (bottom).

References

Griffiths, N. 2023. *Flood mapping for Mackenzie and Waitaki district plan reviews*. Environment Canterbury Science Report No. R23/47