BASELINEGROUP

Appendix 5: Ecan Flood Assessment

Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

Customer Services
P. 03 353 9007 or 0800 324 636

PO Box 345
Christchurch 8140

P. 03 365 3828
F. 03 365 3194
E. ecinfo@ecan.govt.nz

www.ecan.govt.nz

20 February 2024

Sreeja Banerji
Sreeja@metaarchitects.co.nz

Dear Sreeja

LOT 2 DP 580320 & SEC 1 SO 559834 – 860 WATERHOLES ROAD, ROLLESTON

Flood Hazard

The property may be susceptible to flooding from local rainfall runoff.

Enclosed is a map showing ground levels across the property derived from LiDAR data obtained in 2017. LiDAR is an airborne laser system that surveys ground topography. The ground levels are presented in metres – Lyttelton Vertical Datum 1937 (LVD1937). When compared to known survey points, the data typically has a vertical accuracy of ± 150 mm or better.

Selwyn District Council has completed rain-on-grid flood modelling for the majority of the district. This modelling includes 200 and 500 year average recurrence interval (ARI) events. The modelling shows some minor flooding on the property for both ARI events. Much of the property is shown to be clear of flooding. Mapped results of this modelling are available here:

https://apps.canterburymaps.govt.nz/FloodModelResults/?extent=1556198.2684%2C5175469.853%2C1557344.8238%2C5175989.9831%2C2193

The property is located within the Partially Operative Selwyn District Plan (SDP) 'Plains Flood Management Overlay'. Constructing new dwellings within this overlay is a permitted activity under the district plan if they are not located in a high hazard area and have a finished floor level that is at least 300 mm above the 200 year ARI flood level. High hazard areas are defined as areas where the water depth (m) x velocity (m/s) is greater than 1, or the water depth is greater than 1 m, in a 500 year ARI flood event.

Based on the information above, there are no high hazard areas on the property. New dwellings could be constructed on the property using a combination of location choice and raised floor levels. Environment Canterbury is able to provide floor level recommendations for new dwellings.

When using the information provided in this letter, it is important that the following points are understood:

- The information is limited to what Environment Canterbury currently has available. The District Council or local residents may have further information about flooding at the property.
- Environment Canterbury's understanding of flooding at the property may change in the future as further investigations are carried out and new information becomes available.
- It is assumed that flood protection works will be maintained to at least their current standard in the future.
- Stopbank failure can occur at flows less than the design standard, and the location of bank failure/overtopping may affect flood depths/levels at the property.
- Flood flow paths and depths/levels can be affected by changes on the floodplain such as:
  - Earthworks, road alterations, and irrigation structures

- Property development including buildings, fencing, and hedges
- Blockages in culverts, drains, and bridges
- Seasonal vegetation growth
- Antecedent soil conditions

The prediction of flood depths/levels requires many assumptions and is not an exact science.

Yours sincerely,

Michael Thwaites

Science Analyst (Natural Hazards)

Encl. 2017 LiDAR Map

860 Waterholes Road, Rolleston - LiDAR Map