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7 February 2025

Isabelle Harding
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Dear Isabelle

RES 3537 – MCDONALD ROAD, LINCOLN

Flood Hazard

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

Enclosed is a photograph of the property taken after a rainfall event in 2013 that shows minor ponding on the property. Note that the photograph may not show flooding at its peak. In larger rainfall events it is likely that more extensive areas will be affected by flooding.

Also enclosed is a map showing ground levels across the property derived from LiDAR data obtained in 2023. LiDAR is an airborne laser system that surveys ground topography. The ground levels are presented in metres – New Zealand Vertical Datum 2016 (NZVD2016). 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 ponding on the property, however the proposed dwelling location is clear of flooding in both ARI events. Mapped results of this modelling are available here:

https://apps.canterburymaps.govt.nz/FloodModelResults/?extent=1557543.4371%2C5163812.6084%2C1558116.7148%2C5164072.6735%2C2193

The proposed dwelling location is 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, the proposed dwelling location is not within a high hazard area. No significant flooding is expected at the proposed dwelling location, therefore **the floor level does not need to be raised to meet the district plan requirement.** Building code and building act requirements will still apply and care should be taken to ensure there is adequate fall away from the dwelling to avoid the potential for nuisance flooding.

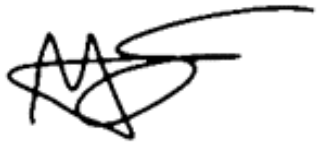
When using the information provided in this letter, it is important that the following points are understood:

- 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. 2023 LiDAR Map
Photo no. 0321 (23/06/2013)

- Looking south-east across the intersection of Springs, Goodericks and Englishs Roads - 23-06-2013

McDonald Road, Lincoln - LiDAR Map