Amy Young

From: Kemp, Jonathon <Jonathon.Kemp@stantec.com>
Sent: Friday, 9 February 2018 11:14 a.m.
To: Amy Young
Cc: MWH Hazards Team
Subject: SUB-2017-74 and LUC-2017-407 34 Gorman Street Macandrew Bay

Hello Amy

We have assessed the application in relation to the hazard register, street files and available aerial photography. We have not visited the site.
We have the following comments to make regarding the application.

Proposal
The proposed activity is to subdivide existing title into three allotments.
Site investigation reports have been provided from Site Environmental Consultants titled *"Landscape Report"* dated July 2017 and revised in September 2017
Plans for the proposal are provided within the application

Hazards
From the Hazard Register, street files, and previously sent emails; for both this title and nearby properties the following hazards have been identified:

- Hazard ID 10118: Land Movement Dickson St Landslide B Inactive Slump
- Hazard ID 10127: Land Movement – Peninsular Landslide Class 1 Very Slight. This is identified in the location of Proposed Lots 1 and 2
- Hazard ID 10127: Land Movement – Peninsular Landslide Class 2 Slight Risk. This is identified in the location of Proposed Lot 1
- Hazard ID 10127: Land Movement – Peninsular Landslide Class 3 Moderate. This is identified in the location of Proposed Lot 2
- Hazard ID 10127: Land Movement – Peninsular Landslide Class 4 Severe
- Hazard ID 10127: Land Movement – Peninsular Landslide Class 5 Very Severe. This is identified in the location of Proposed Lot 2 and 3
- Hazard ID 11291: Land Movement – Dickson St/Wharfdale Landslide
- Hazard ID 10118: Land Movement – Dickson Street Landslide Monitoring

Global Setting
The underlying geology consists of Plagioclase-augite-olivine-basalt from the first main eruptive phase.
The site has numerous slopes ranging from less than 12 degrees up to 35 degrees. The location of the existing dwelling on lot one, is located in relatively flat area (less than 12 degrees).
The proposed building platform for Lot 2 is located with steeper slopes in the area and in close proximity to a natural gully with slopes ranging from 26 degrees to less than 12.
The proposed building platform for Lot 3 is located with slopes in the range of 15 – 20 degrees.

Earthworks / Excavations / Retaining Structures
No major earthworks are proposed as part of the application. The applicant notes that a retaining wall will be required uphill of the proposed building platforms for lots 2 and 3.
The maximum heights of the retaining walls will be 3m.
The application notes that Lot 2 will require minimal earthworks for the building platform as a previous owner has excavated the site to near level. Lot 3 will require further excavations to level the platform.

Discussion
The proposed dwellings for lot 3 is located in an area of Class 5 - Very Sever risk of Land Movement and the proposed dwelling for Lot 2 is located in an area of Class 2- slight risk. The underlying lithology is well known for its

sensitivity to over excavation and ground water. The applicant has not acknowledged this risk of land stability and it is recommended that a site specific geotechnical assessment is completed.
The proposed building platform for Lot 2 is to be built on top of a level platform which was previously excavated by pervious owner. There is no indication of that this is natural ground and there is a risk that there may be un-engineered fill under this building platform.
There is an existing gully running between Lot 2 and Lot 3 in which an access road is proposed to be built across. The applicant indicates the access way will follow an existing benched track and a new culvert will be required but there is no indication of culvert sizing or potential effects.
There are general potential instabilities of concern with regard to the land stability of the site.
The proposal will not create or exacerbate instabilities on adjacent properties

Advice
We recommend that advice be made to the effect:-

- Any upgrade or new culverts should ideally be designed to a reasonable minimum flow capacity by someone who knows what they are doing. Good practice would be for this design to assess the potential effects of a blockage and where the secondary flow would go beyond the design capacity

Conditions
We recommend that the following conditions be required:-

- Development is subject to approval of a site specific geotechnical assessment by an appropriately qualified person, confirming that the site is suitably stable, and that the proposed locations for construction or earthwork will not create or exacerbate instability on this or adjacent property.
- All walls retaining over 1.5m, or a surcharge / slope, including terracing, require design, specification and supervision by appropriately qualified person/s
- Where the long-term stability of other's land or structures may rely upon the continued stability of retaining works, the designer must confirm that the retaining structure can be safely demolished following a complete design life without creating hazards for neighbouring properties.
- Any earth fill over 0.6m thick supporting foundations must be specified and supervised by a suitably qualified person in accordance with NZS 4431-1989 Code of Practice for Earthfill for Residential Development
- Slopes may not be cut steeper than 1:1 (45°) without specific engineering design and construction
- Slopes may not be filled steeper than 2h:1v (27°) without specific engineering design and construction

Kind Regards,

Jon

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