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GEOTECHNICAL

Tauranga District Council
Private bag 12022
Tauranga

24 April 2018

For the attention of s 7(2)(f)(ii)

Dear s 7(2)(f)(ii)

Mauao Slopes; Monitoring Report for April 2018

This letter is to report the survey benchmark monitoring, site geotechnical walkover, rockfall and slip developments since the previous monitoring.

1. Report on works carried out during winter 2017:

1.1 Mauao threatened plant survey assistance

On the 31 of July 2017 s 7(2)(a) f Privacy Wide Lands contacted s 7(2)(f)(ii) s 7(2)(f)(ii) at TCC requesting access to locations on Mauao for a joint project with DOC to collect data for flora and reptile population . s 7(2)(f)(ii) called Avalon in order to assist s 7(2)(a) f with roped access and equipment for her project .

On 16 -17 of August 2017 Avalon dispatched a team of two Technicians to assist s 7(2)(a) f Security staff were organised by s 7(2)(a) to close Oroahine track area for two days. Avalon's project reference # was 17140

During the work the team found a number of unstable looking areas of rock face. Some of the smaller rocks were scaled in a controlled manner, landing on the Oruahine track below.

A significant amount of larger unstable boulders were also found. The team reported this to s 7(2)(f)(ii) by email of marked up photographs; see below.

Avalon recommended a team a two technicians for minimum one day to scale this area.

This work has not yet been completed.



Photo 1. Rock found on Oruahine track.



Photo 2. Loose rock above the Oruahine



Photo 3. Loose rock above the Oruahine track.

1.2 26 June 2017 Scaling of loose boulders

§ 7(2)(f)(iii) contacted Avalon regarding a few particularly hazardous and unstable looking boulders eroding out from the crest of a recent soil slip above the western Base track.

Avalon mobilised a three person team, Aegis Security closed the Base track and the marginal rock was scaled or moved in stable areas of slope.

Avalon's project reference # was 17048.



Photo 4. Slip above Base track.



Photo 5. Boulder now moved to a safe location.

1.3 6 November 2017 Soil slip along with rock and pohutakawa

A soil slip event above the north west Base track.

s 7(2)(f)(ii) called Avalon to inspect the slip and scale as required. This work was carried out in one day under Avalon's Project Reference # 17054.



Photo 6. Slip above Base track



Photo 7. Slip above Base track

2. Walkover Geotech Inspection 17 April 2018

The inspection walkover found two rocks on the tracks which likely were rockfall. One was on the Oruahine track:



Photo 8. Rock found on Oruahine track.



Photo 9. Rock found on Waikorere track.

The exact source locations of these rocks could not be located. Obviously both these rockfalls would have been extremely hazardous to anyone in the vicinity at the time and they are a reminder that the rockfall risk to public is very real.

The major underslip on the base track northwestern side had not changed much in comparison with 12 months previously.



Photo 10. April 2017



Photo 11. April 2018.



Photo 12. New bench seat below base track slip.

The slip and rockfall source immediately above the northern base track in photo 5 appears to have become more stable subsequent to the scaling work done in 2017. Ongoing erosion at this location will eventually result in exposed rocks and increased rockfall risk. Due to this the siting of the two new bench seats below may not have been the best choice of location even though there is a good verge behind the seats.

All the upper fence lines were walked and no signs of recent rockfall damage were found.

Comparison of the routine monitoring photographs with previous years did not reveal any major change in the bluffs, just the normal erosion and rearranging of small surface gravel.

The benchmark EDM survey found no significant movement on the bluffs.

In conclusion, the previous evaluations of the rockfall risk remain relevant and the risk to individuals appears to be within tolerable limits. However, there will no doubt eventually be an incident and due to the popularity of Mauao extremely high visitor numbers.

If you have any queries please don't hesitate to contact me at any time and let us know if you want to go ahead with the scaling highlighted in section 1.1 of this report.

Regards

s 7(2)(a) f Privacy