

MINUTES

SPECIAL MEETING REGARDING ROCK REMOVAL FROM MAUAO IWI REPRESENTATIVES OF MAUAO STEERING GROUP

Friday, 23rd November 2007 9.30am – 11.20am
Te Awanui Room – Tauranga City Council

In Attendance:

s 7(2)(a) - Privacy

s 7(2)(f)(ii)

Apologies:

s 7(2)(a) - Privacy

s 7(2)(f)(ii)

Councillor Rick Curach

s 7(2)(f)(ii)

s 7(2)(a) - Privacy

1. s 7(2)(a) - Privacy opened the meeting with a Karakia.
2. s 7(2)(f)(ii) welcomed everyone and introductions were made by attendees.
3. s 7(2)(f)(ii) gave a brief outline of the background regarding the latest intended rock removal from Mauao.

The Brief:

Mauao had a rock fall in late July leaving a larger overhang
-Visitors walking the Base Track dodged the rock fall from the Oruahine Track.
-Powerpoint indicated the rock
-Rock could fall at any time – without any warning – suggested as being a significant hazard with potential of significant injury
-See report from Avalon dated 17/8/2007 (Page 5) – photo of rock before rock fall – and the new rock area shown with overhang and cracks which were left.

Early August, Avalon (rock specialists) visited site for a visual of the area.

Middle of August, Avalon came back and completed a full assessment of the rock's stability

August 15th, s 7(2)(f)(ii) reported to the Mauao Steering Group meeting that there was an issue with a rock fall. It was stated (by Iwi) that 'if the over hanging rock is a hazard that it would have to be removed'. Awaiting final report from Avalon. It was mentioned at the time that if

Avalon could not find evidence that the rock was safe, it would be removed. Mentioned that it was likely that it would need to be removed and would have to be blasted off.
20 th August, Received report dated 17/8/2007 from Avalon. The rock was deemed a hazard.
September, TCC Management decided to remove the rock.
Late September, Prices were sourced.
October, A third opinion was received (Terrane Consultants), about the stability of the rock, and also confirmed that the rock was a hazard.
Middle of October, Avalon were the successful contractor awarded the project.
Plans were put in place with a set date 19 th November to remove the rock.
An information letter was sent out (9/11/2007 by s 7(2)(f)(ii)) to the Steering Group members informing them of the planned date of rock removal on 19/11/2007.
Iwi members requested a meeting to see the rock in question.
This meeting happened on 15 th November (attended by: s 7(2)(a) - Privacy s 7(2)(a) - Privacy)
Iwi requested a Steering Group meeting to discuss the project to see if other options for removing the rock other than blasting. Meeting set up for Friday 23/11/2007
Rock removal project scheduled for 19/11/2007 was put on hold.
19 th November, Avalon supplied an appendix to their report detailing their chosen option of a localised blast on the overhang.
23 rd November – Meeting with Iwi and TCC with Avalon in attendance proceeded.

Blasting

s 7(2)(f)(ii) stated that at the last Mauao PSG there was agreeance that the overhanging rock was a hazard and that the rock should be removed. Staff were given approval to investigate how the rock would be removed. Today's meeting was to look at the investigative findings. s 7(2)(f)(ii) went over the history regarding the "blasting" The previous 'rock blasting' caused a lot of angst and anger amongst the Maori community. When the Kaumatua was called in to do the karakia prior to the 'blasting' this was viewed as giving approval to Council's action. Tangata Whenua are stating that 'removal by blasting' should be the very last option and that other alternatives be explored first.

s 7(2)(f)(ii) emphasised that blasting was recommended in this instance because of the size of the rock (100 ton approximately) and where the rock is and the condition/risk factor. Other methods of rock removal are used as per individual assessments.

s 7(2)(a) - Privacy gave a rundown of how Avalon reached the decision for the blasting method. He referred to the six monthly report dated 26/7/2007 which gave an idea of the changes that had occurred.

Mauao as a natural mountain will have rockfalls, but the rock in question is a real hazard to the Mauao tracks as it sits above the Oruahine track with the fall path to the Base Track.

s 7(2)(a) - Privacy referred to Avalon's recommendations in report 26/7/2007 Page 5 showing the North Western Oruahine Track.

Reference was also made to the Avalon letter dated 17/8/2007 – photos show the movement in the rock and that the fenced areas would only hold up under small rock falls.

Options for removal of the rock (on 19th November) other than blasting...

- by machine, ie to push the rock out (possibly need a road for machinery)
- remove by hand – rock is too big, unable to remove safely, take a long time with extended track closures

s 7(2)(a) - Privacy queried the vibration from blasting method.

s 7(2)(a) - Privacy said vibrations could affect other rock in the vicinity, no guarantees could be offered regarding limitation of the destabilising risk, but overall it was the preferred method after assessment by Avalon.

s 7(2)(f)(ii) said the rock involved is a stand alone rock.

s 7(2)(a) - Privacy explained that Avalon came to the blasting method due to cost restraints, for OSH reasons, and feasibility and for being less hazardous to Avalon's operations team.

Helicopter

s 7(2)(a) - Privacy asked if costs had been acquired for the use of a helicopter, if not, that the possibility should be investigated.

s 7(2)(a) - Privacy stated that the rock involved was over 100 tons. It would have to be broken up to be removed by helicopter.

Action: Avalon would consult with helicopter operators re the use of a Chinook helicopter, what calculations would be required, eg for rock densities.

s 7(2)(a) - Privacy emphasised that an alternative to blasting should be investigated and where possible used in the first instance.

s 7(2)(a) - Privacy commented that they could not eliminate the use of a helicopter as details were not known.

Grouting Compound/Drilling

s 7(2)(a) - Privacy explained that other options were investigated but discounted, e.g. Drilling rock, adding a grout compound poured into many drilled holes – this compound expands with pressure but the uncertainty is that it would not be known where it would split the rock.

s 7(2)(f)(ii) asked for more information about the grouting method. s 7(2)(a) - Privacy detailed that drilled holes would be placed outside the joints of the rock and grout added, left overnight to expand and to fracture the rock. Sometimes this works and if it doesn't it leaves an unpredictable hazard to be removed by another method.

s 7(2)(a) - Privacy emphasised that this methodology held a high risk to the operatives and had been eliminated by Avalon.

s 7(2)(f)(iii) stated that there was going to be difficulties with any rock fall, such as taking into account people accessing the tracks, regardless of staff guarding all tracks when there are rock removal projects underway as people still accessed Mauao.

s 7(2)(a) - Privacy commented that there were several parameters around using a longer method of rock removal, ie – Time – the effect on restrictions of closing the tracks, Cost, Disruptions (Mauao being a high profile mountain, and damage that Mauao could incur), Safety (being the trigger for other mechanisms that could be used).

s 7(2)(a) - Privacy asked about compressors and drills.

s 7(2)(a) - Privacy said they had shied away from using compressors and drills due to the vibration from drilling causing potential uncontrolled rockfalls while operatives were working on the site.

Costs/Tenderers

In answer to s 7(2)(f)(ii) query regarding the cost for the blasting method, s 7(2)(f)(ii) said Avalon's quote was for s 7(2)(b)(ii) - Commercial Position. Avalon had tendered at a good level due to the relationship they had built up with TCC and also their concern for Mauao. Other companies had tendered. Ice had also given blasting as their preferred methodology, Terrane Consultants also believed the rock was hazardous and blasting was suggested.

s 7(2)(a) - Privacy raised the point that other tracks could be open if the North Rock to Beach was closed if other longer term options were used.

Public

s 7(2)(a) - Privacy replied that the public would probably take heed of the caution notices for work being undertaken for the first day, and maybe the second, but would soon forget. If OSH were involved after an accident they would query as to when we knew about the hazard and what actions we put in place to minimise the risks – ie to the public, to the operators, to others accessing Mauao.

s 7(2)(a) - Privacy commented that Avalon had reached the suggestion of blasting as the rock is so big. You could minimise the explosives but the risk of the unpredictability of the rock is always there, you could use Hydraulic Jacks (this is a slow method and with a very unpredictable outcome), Drilling with the placement of small charges. Jacking is risky.

Site Visit

s 7(2)(a) - Privacy asked for another site visit with Avalon to have a closer look at the rock.

s 7(2)(f)(ii) said that s 7(2)(f)(ii) had offered to take anyone up by rope for a closer look at the rock area.

The Rock Involved

Discussion was held regarding the actual shape of the rock – the bottom portion of rock was fragmenting and the top overhang slopes back. Blasting would push the rock forward, acting like a crowbar/lever. s 7(2)(f)(ii) referred to photos again on Page 5 of Report dated 17th August.

s 7(2)(a) - Privacy explained that the blasting which was proposed was to place charges in the cracks going off every 100th of a second intervals and then later the larger blast in the largest crack behind the overhang.

The Avalon operator has 40yrs experience of rocks
This method of blasting would minimise air blast
Would minimise vibration as it would just trigger the movement of the rock.

s 7(2)(a) - Privacy asked how big a gap was behind the rock.

s 7(2)(a) - Privacy replied that the gap was like a chimney.

Hydraulics/Airbags

s 7(2)(a) - Privacy asked about using hydraulics/airbags to do the job.

s 7(2)(a) - Privacy replied that the shape was a high V – not strong rock, that Avalon could look at the use of hydraulics/airbags but it was likely that this method would crush the rock surrounding the overhang as well. Still a big risk to operators as they would have to keep climbing up there, cost is a big factor, but gut feeling it would turn out more expensive with a lot of uncertainty.

s 7(2)(a) - Privacy thought that the momentum of the rock could be calculated and s 7(2)(a) - Privacy agreed.

s 7(2)(a) - Privacy reminded the attendees that this method increases the risk exposure to operators, that 20 or 30 ton jacks can still only move small rocks and also require a power source, and an anchor. Gut feeling was that it was not practicable option.

Preventative Measures

Question was raised about the preventative measures Avalon would take to reduce the risk.

s 7(2)(f)(ii) advised that if OSH/Department of Labour visited the site after an accident one of their questions would be – What steps were taken to minimise the risk once it was known.

Rock Removal Projects

s 7(2)(f)(ii) asked what costs and safety factors were taken during the first blasting project of rock removal? Reminded that these projects affected 4 tribes and the sensitiveness around blasting without looking at other methods.

s 7(2)(a) - Privacy replied that the first rock removed on the Mount town side was a different element of risk. This boulder could break into several large rocks and fall towards the Base Track and shoreline.

The calculated stability of this rock has been done on the visible gases – which are tubelike holes which the weather gets into – and based on the experience and judgement of the operators.

s 7(2)(a) - Privacy said that he felt the bigger picture needed to be looked at, ie time of fall -if left to fall naturally, and the likelihood of someone being on the Base Track – which all add up to the probability of a Hazardous Risk.

Pulling the Overhanging Rock

s 7(2)(a) - Privacy had the impromptu thought of pulling the overhang down by the use of a boat....

s 7(2)(a) - Privacy summarised Avalon's point on the suggestion of pulling the rock down – and that it would be their first option of alternative methods to blasting. Would need a chain strap around the critical part, a good anchor (probably a larger crop of rock or drill an anchor into the rocks), would also require a chain box/winch/hydraulics.

Pouring Concrete to Stabilise

s 7(2)(a) - Privacy suggested pouring concrete in the cracks to stabilise the area.

s 7(2)(a) - Privacy referred to the rock reinforcement in his letter dated 19/11/07 Page 3 regarding drilling, rock bolting etc. It was eliminated as costing s 7(2)(b)(ii) - Commercial Position and because the risk of movement while drilling was being done along with the uncertainty of when the fall would happen. Mostly it was the appearance after the rock had been removed – perhaps this would then have to be camouflaged somehow.

Meeting Break

s 7(2)(f)(ii) suggested that the meeting should convene without Avalon – thanked Avalon for all the information but thought that the members should have a chance to discuss what they had learned.

s 7(2)(f)(ii) called for a Tea Break and to then recommence without Avalon in order to set a new meeting date for further discussions.

Meeting Break – 10.50am to 11am.

s 7(2)(f)(ii) recommenced the meeting. s 7(2)(a) - Privacy emphasised the timescale, costs involved and the surety of the rock removal. He suggested that even if an alternative was established it could mean Day 1 = to establish detail on site, Day 2 = Put method into place
Day 3 = take in variances, failure (and reasons),
Reassessment - with the only way to go - blasting.

s 7(2)(a) - Privacy agreed that is what they all wanted. To try another method such as pulling and anchoring first was not to be seen as a failure – it is a conclusion and then to try the last resort – ie blasting.

s 7(2)(a) - Privacy said that Avalon had only eliminated other methods due to the cost restraints and also that commercially (in their field) it was the end method that mattered.

Site Visit Arrangements

s 7(2)(f)(ii) thanked Avalon for their input – their expertise and information. He asked the Iwi if they would be interested in climbing up to inspect the rock formation with Avalon.

s 7(2)(a) - Privacy were interested. s 7(2)(a) - Privacy had previously inspected the site).

Action: s 7(2)(f)(ii) ***to arrange an on-site inspection with Avalon and to advise members of the date and time to take them up on top of the rock to see the cracks first hand.***

Action: Avalon to assess the feasibility of

- (a) **Finding a large enough secure point to use to pull the rock away, using a block and tackle type device.**
- (b) **Setting up a cradle around the rock and lifting it off with a helicopter and possibly drilling as well to free it.**

New Steering Group /Agenda Item

s 7(2)(a) - Privacy wishes to add rock climbers on Mauao on the next Steering Group Meeting Agenda.
s 7(2)(f)(ii) informed the attendees about the new start time for the Steering Group meetings and explained the new format with s 7(2)(f)(ii) Councillor Rick Curach as also being the newly appointed Committee Members..

s 7(2)(a) - Privacy queried about signage for Mauao which s 7(2)(f)(ii) was to discuss separately.

All Options to be Tabled

s 7(2)(a) - Privacy reiterated that they would appreciate further information regarding the use of a helicopter especially regarding lifting weights. Needed to weight up all options rather than starting with blasting. Would like all options tabled.

Action: s 7(2)(f)(ii) to contact Columbia Helicopters to obtain information on lifting a rock approx. 100 ton before the onsite meeting to view the rock with s 7(2)(a) - Privacy

s 7(2)(a) - Privacy

s 7(2)(f)(ii) also pointed out that the helicopter and other costs would have to be justified to the Ratepayers due to the likelihood of further rock removals being necessary.

Closing Karakia at 11.20am

References:

Avalon Geotechnical Letter dated 26/7/2007 – Mauao Slopes – Monitoring Report July 2007

s 7(2)(a) - Privacy

Avalon Geotechnical Letter dated 17/8/2007 – Rockfall on Mauao – 31 July 2007

s 7(2)(a) - Privacy

Avalon Geotechnical Letter dated 19/11/2007 – TDC Mauao Blasting – Area Stability

s 7(2)(a) - Privacy