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Prepared for Tauranga City Council,
by the Hon. Paul Davison KSO KC

August 2026

External Review into the Mount Maunganui Beachside Holiday Park Landslide on 22 January 2026

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The tragedy at Mount Maunganui on 22 January 2026

EXTERNAL REVIEW REPORT OF HON. PAUL DAVISON KSO KC INTO THE MOUNT MAUNGANUI BEACHSIDE HOLIDAY PARK LANDSLIDE ON 22 JANUARY 2026: FOR TAURANGA CITY COUNCIL (TCC)

The tragedy at Mt Maunganui on 22 January 2026

[1] Shortly before 9:30 am on the morning of Thursday 22 January 2026 there was a massive landslide from the lower slopes of Mount Maunganui (Mauao). The soil, clay, and rock comprising the landslide material moved rapidly, and within seconds it had flowed down off the mountain, and out over the adjacent campground,[1] completely engulfing an amenities building where six people were trapped. Family members of some of those people, Tauranga City Council (TCC) staff who were on hand that morning to manage public access to the mountain, and several members of the public who had heard and seen the landslide, responded immediately and made desperate attempts to locate and save the occupants of the building. Emergency services were notified and arrived within minutes, initially working alongside the first responders before directing them to step back, and taking exclusive control of the rescue efforts.

[2] The six people who tragically lost their lives in the landslide were all staying in the campground at the time. They were: Lisa Maclennan (51) from Morrinsville; Susan Knowles (71) and Jacqualine Wheeler (71) from Rotorua; Måns Bernhardsson (20) from Sweden; and Sharon Maccanico (15) and Max Furse-Kee (15), both students from Auckland.

[3] Despite the extended period of heavy rainfall which preceded this landslide, and despite the occurrence of a number of other landslides occurring on Mauao earlier that morning (including large slips that had come down on the eastern side in proximity to the Mount Maunganui Lifeguard Service (surf club) building, and

[1] Tauranga City Council (TCC) is the owner and operator of the campground. Mauao ("caught by the morning light"), is a sacred ancestral mountain (tupuna maunga), which is owned by the Mauao Trust on behalf of Ngāi Te Rangi, Ngāti Ranginui, and Ngāti Pūkenga and is managed by the Joint Administration Board (Ngā Poutirião ō Mauao) consisting of the Mauao Trust and TCC representatives.

several smaller slips that had occurred in the same location as the fatal landslide only hours before), and despite the obvious presence of a stream of muddy turbid water flowing from the foot of the soon to fail slope, the risk of an imminent landslide was neither recognised nor appreciated by campground management, or any of the other TCC staff who were present. No precautionary steps were taken to evacuate occupants of the campground from the vicinity of the area. No warning was given before the fatal landslide suddenly and rapidly occurred.

[4] TCC missed several opportunities over the 24 hour period preceding the fatal landslide to take action and evacuate the area of the campground where the landslide occurred.

[5] The first opportunity was when the MetService issued a rare Red Heavy Rain Warning for the Bay of Plenty for the 24 hour period from 9:00 am on Wednesday 21 January, forecasting a further 180 to 240 mm of rain on top of already accumulated rainfall.[2] Similar levels of rainfall previously had resulted in significant landslides on Mauao.

[6] The second opportunity was when the forecast rainfall eventuated. TCC was then no longer dealing with a forecast extreme weather event: that event had arrived.

[7] By early in the morning on Thursday 22 January 2026, other significant warning signs were also present, including: large slips on other parts of Mauao; smaller slips above the campground; a stream of muddy turbid water flowing from the foot of the slope directly above the campground's Harbour Amenities block,[3] signalling possible slope instability. Each of these warning signs was an opportunity for TCC to take decisive and timely evacuation action.

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2 Along with peak intensities of 25 to 40 mm per hour during Wednesday evening. MetService describes red warnings as "[r]eserved for only the most extreme weather events, such as the severe weather resulting from ex-tropical cyclones, where significant impact and disruption is expected. It signifies that people need to **act now** as **immediate action is required** to protect people, animals, and property from the impact of the weather. People should also be prepared to follow the advice of official authorities and emergency services. Red Warning icons will always be displayed as a triangle" (https://about.metservice.com/about-severe-weather-warnings). This warning led to precautionary decisions being taken across the region - a local state of emergency was declared for the Bay of Plenty and the Bay of Plenty Regional Council activated its Flood Room.

3 The amenities building engulfed by the landslide was known as the Harbour Amenities block.

[8] Tragically, these opportunities were missed. No evacuation direction or advice was given to campground users. Many of TCC's own staff were themselves working in harm's way during this time, unaware of the heightened landslide risk.

[9] A properly developed and implemented Trigger Action Response Plan (TARP) was the most suitable option to manage the landslide risk to the campground. Such a plan would have established specific criteria and enabled TCC staff to readily recognise indicators of elevated risk, including forecast rainfall, actual rainfall, observed landslips, and muddy water seeping from the base of the slope, and make timely and informed evacuation decisions in accordance with pre-planned actions and responses immediately once the trigger criteria occurred or were observed

[10] TCC knew of the landslide risk to the campground, and it also knew that a TARP was a recommended control. In December 2023 and June 2025, different geotechnical consultants had both recommended to TCC that a TARP be developed for the landslide risk at the campground. Neither recommendation had been implemented by 22 January 2026. This was a systemic failure with tragic consequences. Had a TARP been in place, evacuation would likely have occurred well prior to the fatal landslide and the tragic loss of life that occurred would in all likelihood have been averted.

[11] In the sections that follow, I will:

(a) Outline what happened on Thursday 22 January 2026;

(b) Discuss the Terms of Reference for this Review;

(c) Examine what was known by TCC about the landslide risk to the campground and how TCC identified, assessed and managed any risks prior to the state of emergency;

(d) Outline my findings;

(e) Set out my recommendations.

What happened on 22 January 2026

Lisa and Travis Maclennan

[12] On 19 January 2026, despite the adverse weather forecast for the next few days over the upper North Island and particularly the East Coast, Coromandel - Bay of Plenty areas, Lisa and Travis Maclennan made a 'spur of the moment' decision to go and stay at the Holiday Park for three nights from Tuesday 20 January,[4] having arranged to borrow a campervan from members of Lisa's family. When making their telephone booking through the Holiday Park office, they were asked about the length of their campervan before being allocated campsite H65 which is situated in a row of campsites located at the top of the campground directly adjacent to the foot of the slope of the mountain.[5]

[13] Lisa and Travis arrived at the Holiday Park on Tuesday 20 January and parked their campervan on H65. Some branches of the trees on the bank at the rear of H65 overhung their campervan, but they were quite happy about that as the trees provided them with shelter. On the day of their arrival they spent some time at the hot pools. That evening rain started falling. The following day (Wednesday 21 January) the Maclennans drove their campervan to the Bayfair Mall and went to a movie. At 11:57 am Travis received a Civil Defence Emergency Alert on his cell phone. He took a screenshot of the message which read:

> Emergency Alert 10m ago
>
> RED SEVERE RAIN WARNING
>
> MetService has issued a RED SEVERE RAIN WARNING for Bay of Plenty from 9:00am Wednesday to 9:00 am Thursday.
>
> Put safety first. Don't take any chances. Act quickly if you see rising water. Do not try to walk, swim, or drive in floodwater.
>
> Avoid all non-essential travel. Bring pets indoors and move livestock to high ground where possible.

4 Their booking was for the nights of 20, 21, and 22 January 2026.

5 The approximate campsite locations are shown on the Beachside Holiday Park information sheet provided to campers (set out in appendix two, document (a)).

> Be prepared to evacuate. Keep a grab bag close. If you are in immediate danger call 111.
>
> Contact your local council for more information.
>
> Issued by Bay of Plenty Civil Defence Emergency Management Group 21.01.2026 11.45am

At around 3:15 pm that afternoon, Lisa and Travis returned to the campground and parked back on site H65. By then it was raining heavily and they remained in the campervan for the night. When they went to sleep that night Travis was on a bed at the rear of the vehicle nearest the slope, and Lisa slept on a bed towards the front. Travis says that during the night they heard and felt what they thought were branches from the trees hitting the roof of the campervan, but when they looked the next morning they could not see or find what may have been making the noise.

[14] Around 4:30 am on the morning of Thursday 22 January Lisa was woken by movement of the campervan and hearing a noise. She woke Travis who says that Lisa was panicking and initially thought that it was an earthquake. She went out and saw that the slope behind the campervan had come down and hit the rear of their vehicle. Some of the mud and soil from the slip had gone under the campervan covering the electric cable which was connected to a power bollard.

[15] Lisa then moved the campervan, parking it on the campground driveway nearby. She then went and woke the occupants of a small blue tent which was pitched beside them on campsite H66. Lisa was worried that the man and his young daughter in the tent could be trapped if any more of the slope failed.[6] Having been woken and alerted by Lisa, the man and his daughter got up and joined Lisa and Travis standing around their campervan. By then it was around 4:40am, the rain was falling and it was still dark.

Travis Maclennan calls TCC

[16] Travis and Lisa wanted to urgently contact the management of the Holiday Park to tell them what had happened so that other campers would be alerted to the risk

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6 Member of Public B and his daughter.

of any further slope failures. At 4:43 am Travis used his cell phone to call the numbers printed on the Beachside Holiday Park information sheet.[7] His call was answered by a security firm and the staff member who took the call explained that as they did not have anyone on site at the campground at the time, his call would be transferred to the TCC Contact Centre which operates 24 hours a day. Travis' call was then transferred to the Contact Centre and answered by Staff Member A. The call was recorded and subsequently transcribed:

> Staff Member A: You are speaking with SM A How can I help?
>
> **Travis Maclennan:** Oh, Hi there! We're staying at the Mount Beachside Holiday Park. And we're trying to get hold of them, but obviously, it's outside of the hours. There's been a slip where we're staying, and it's affected a few of us, and we obviously don't know. Well, we want to get hold of them so that we can let them know, but it's affected a few people here. Some people are in tents and some of us are in like campervans, so we're just trying to alert the Mount Maunganui Beachside Holiday Park to let them know but a few people here need to be relocated into some temporary accommodation because they're in tents.
>
> Staff Member A Okay, and who was I speaking with?
>
> **Travis Maclennan:** My name is Travis Maclennan.
>
> Staff Member A confirms Travis' mobile phone number]
>
> Staff Member A Do you mind if I just pop you on hold and I will look into this and see what I can do.
>
> **Travis Maclennan:** Yeah, yeah, that's fine. Thank you.
>
> Staff Member A Oh, just also, before pop … back on hold, actually, do you know how many people need to be relocated?
>
> Staff Member A Yeah, well, at the moment, my wife's just out there. At the moment. I think there's a couple of people in the tent. How many people are in the tent? It's a family. It's a family that we've been in touch with so far. Yeah, that's as far as we've got with.
>
> Staff Member A Okay. You so [you're] unsure how many people in the family?
>
> **Travis Maclennan:** The guy and his daughter. Sorry, it's a guy and his daughter.
>
> Staff Member A Okay, 2 people one male and daughter. Alright, I'll just pop you on hold. Won't be too long.
>
> **Travis Maclennan:** Okay, thank you.
>
> Staff Member A Thank you for holding. Just wanting to confirm if you have gone and

[7] There at two telephone numbers on the information sheet. A freephone: 0800 6823224; and 07 5754476.

tried the intercom at all, because what it does is it puts you straight through to the cell phone of, should be SM Q or a staff member that should answer.

Travis Maclennan: That's okay. No, we haven't yet. We were a little bit flustered, so we rang straight through to the number, and it put us straight through to you guys.

Staff Member A Okay. Oh, you rang straight through to which number?

Travis Maclennan: To the beach number, yeah, and it just took us straight through to you guys.

Staff Member A Okay, alright. I'll just pop you on hold. I'll see if I can put you through to someone. There. Won't be a minute.

Travis Maclennan: Okay.

[17] Leaving Travis Maclennan's call on hold, Staff Member A then made two calls to the campground's after-hours mobile telephone number.[8] Neither call was answered. At 4:52 am Staff Member A called the Emergency Management Officer's (EMO) phone, spoke briefly to the Staff Member B and then transferred Travis Maclennan's call to her. When she took the call, Staff Member B was at her home. She had been in at the TCC Emergency Operations Centre (EOC) throughout that day, but had taken the Duty EMO phone home with her.[9] Staff Member B spoke briefly to Mr Maclennan. He told her that he and his wife were staying at the Mount Maunganui Holiday Beach Park, and that a slip had come down behind their campervan and an adjacent tent. He said that they were wanting to contact someone at the Holiday Park but had been unable to get hold of anyone. In the course of this conversation Travis said that they had located an intercom which they were going to use. Staff Member B said that she would get someone to call them back. Mr Maclennan's call had lasted 13 minutes.

[18] Shortly after her conversation with Travis Maclennan, Staff Member B took a call from a police officer who advised that a landslide had taken down a house on Waitaha Road and that a 70 year old woman and a 10 year old boy were missing. The police officer said that as it was considered unsafe for people to remain in the vicinity, the

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8 The first call was at 4:50 am, and the second at 4:51am.

9 During Wednesday 21 January Staff Member B was involved with assisting the standing up of the EOC, and at the end of the shift when it was decided who would stay on for the night, and as she was still the Duty EMO, her Staff Member AE suggested she take the Duty EMO mobile phone home with her as she could still function effectively as the Duty EMO from home, and said that he would look after any emails that were sent to the Duty EMO's email address.

occupants of nearby residences and attending police staff had been evacuated. It appears that Staff Member B verbally reported these telephone conversations to the EOC Staff Member AE before confirming them in an email.[10]

[19] At 5:15 am Staff Member B emailed EOC operations; EOC welfare; and EOC intelligence, giving brief details of her conversations with the police officer and Travis Maclennan; giving their mobile phone numbers; and saying that they both needed to be called back. She said:

> Morning team,
>
> I have had two phone calls just now that will need some callbacks, please.
>
> 1. Zane Smith from Police [021 xxx xxxx]
>
> There is a slip on Waitaha Road that has taken down a house. A 10 and 70 yr old are currently missing. Evacuations of houses have happened. It is too unsafe for the people and police to stay in the area. People are evacuating to the Waitomo service station (72 Te Puke Highway) and may need help with needs.
>
> 2. Travis – [021 xxx xxx] – Current resident of the Mt Maunganui Holiday Beach Park. A slip has come down behind their campervan and an adjoining tent. They were wanting to contact someone at the holiday park, but at that time had not been able to get a hold of anyone. As I was chatting to them they did find an intercom they were going to use. I told them either way I will get someone to call them back, please.
>
> Thank you team.
>
> Kind regards,
>
> Staff Member B

[20] Travis' telephone conversation with Staff Member B took place while he and Lisa were standing outside the campground office. Having located the intercom they then used it in an attempt to contact the campground management. As well as using the intercom, they knocked on the walls of the building in an attempt to attract the attention of anyone inside. There being no response they went back to their campervan. It was still dark. Lisa then moved the campervan and parked it on the grass beside the driveway at the northeastern end of the Harbour Amenities block.

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10 Document 5787.

[21] At around 5:15 am Lisa and Travis noticed that there had been another landslip which had come down further along the driveway towards the cabins on sites H72 and H73. Seeing this, Lisa and Travis went and woke the occupants of the cabins. Two occupants of one cabin evacuated immediately, while the occupants of the second remained in their cabin. Lisa and Travis also went and woke up the occupants of a campervan parked on or near campsite H61, on the north-eastern side of H65.

[22] At 5:21am Staff Member C who was on duty and supporting the EOC Controller, followed up Staff Member B email and telephoned Travis Maclennan. Staff Member C noted her conversation in the EOC Welfare Log:

> Incoming request via Duty EMO to contact Travis - resident at Mt Beach holiday park re a slip that had come down behind their campervan and adjoining tent and wanting to make contact with someone at the park, during conversation with Duty EMO had found an intercom they intended to use. Follow up welfare check to Travis @5.21am indicated he was assisting a neighbouring camper to move their belongings, there had been no injuries and Travis had a location in the campground that was appropriate to shelter in place until he could raise assistance from a staff member. Travis was advised to call back on the EOC welfare number should he need any further support. No further calls from Travis by 7am handover.

[23] Travis says that during this call he was asked whether everyone was accounted for and he had confirmed that they were. At 5:26 am Staff Member C emailed the EOC Controller and the Duty EMO advising that the police officer had been called back, and that:

> Welfare has made contact with Travis – no immediate welfare needs required – looking to relocate at another site at the campground.

Two large landslides behind the surf club are discovered and notified to TCC

[24] Around 5:45 am that morning, Member of Public A[11] a local resident who was up early and walking near the mountain, noticed that two large landslides had come down on the ocean beach side to the north west of the surf club building. At 5:47 am he phoned 111. The 111 operator immediately put his call through to Fire and Emergency (FENZ). The FENZ operator told him that the landslides were a Council matter and

[11] This is taken from a NZ Herald online report by Alanah Eriksen and Michael Morrah dated 27 January 2026: *Mount Maunganui landslide: Were warnings missed? A timeline of who knew what and when.*

that FENZ would notify the Council.[12] At 05:51 am a FENZ staff member telephoned the TCC Contact Centre and spoke to Staff Member A FENZ said that it had been advised that there had been a landslip at the bottom of the mountain which had:[13]

> gone near the Holiday Park down there as well as the surf club … it's taken [out] the stairs going up the hill. ….. [the] caller mentioned about potentially having some problems at the Holiday Park, if the weather continues.

[25] The FENZ operator gave Staff Member A Member of Public A mobile phone number. In the meantime Member of Public A concerned that the situation could get worse, went over to the surf club to tell the lifeguards about the landslides he had seen. He then went around waking some of the campers in that area to tell them about the nearby landslides.

[26] After receiving the call from FENZ advising that a landslide that had come down near the surf club, at 5:53 am Staff Member A tried to contact Staff Member D Staff Member D but was unsuccessful reaching him.[14] She then tried to contact Staff Member E However, her calls made at 6:01am and 6:03 am were both unanswered and went through to his voicemail where the message advised the caller not to leave a voice message, but to send a text. Staff Member A did not send a text as the Contact Centre practice is not to send text messages.[15] Unable to contact Staff Member E at 6:09 am Staff Member A Staff Member A again telephoned Staff Member D this time she spoke to him and relayed the information she had received from FENZ about the landslides on the ocean beach side of the mountain. In his role as Staff Member D responsibilities include the maintenance and repair of the walkways and tracks on Mauao. Staff Member D immediately telephoned his Staff Member F to tell him what had happened, and they made a decision to immediately close all public access points onto the mountain.

[27] Staff Member D then left his home and drove towards the campground. As he was driving along Marine Parade, he could see the large slip which had come down on the

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12 This call was at 5:48am (3 minutes 27 seconds duration)
13 Document 0139.
14 TCC Contact Centre Log. Doc 0138
15 Document 0138.

ocean side over the steps that lead up onto the mountain behind the surf club. He parked his vehicle where he had a better view of the scale of the slip and the extent of the damage it had caused to the track, and started telephoning his crew:

- His first call was made at 6:22 am to Staff Member G to instruct him to bring fence panels to shut off the entrances to the mountain tracks;

- At 6:23 am he called Staff Member E but the call was not answered;

- At 6:24 am he called Staff Member H to get him to come and assist with track closures;

- At 6:31 am he called Staff Member I to get him to bring barriers and equipment to shut off access to tracks on the mountain;

- At 6:37 am he called Staff Member J left a voice message and Staff Member J called him back at 6:51 am;

- At 6:40 am he called Staff Member K to ask him to come straight to the campground to assist;

- At 6:43 am he again called Staff Member E but the call was not answered;

- At 6:56 am he called Staff Member L to ask him to check the walking tracks on the Pilot Bay side of the mountain;

- At 7:00 am he called Staff Member K again to get him to drop off the gear he had brought at the ocean beach side of the mountain, and where Staff Member D Staff Member D had by then, been joined by Staff Member H and Staff Member I

[28] At 7:05 am Staff Member L called Staff Member D and reported that there were multiple slips on the tracks over at the Pilot Bay side of the mountain. By reference to his mobile phone records, Staff Member D notes that at 7:15 am he received a call from

Staff Member M to ask if he needed assistance. Staff Member D asked him to go the Pilot Bay side to assist there.

The Maclennans wait for the Campground office to open - and photograph the landslips

[29] During the period between around 5:30am and 7:00 am, the Maclennans had returned to the campground office several times to try to find any campground staff to tell them about the slips. By this time three landslips from the slope above and behind their campervan had come down:

- The first landslip that had come down on their campervan around 4.30am;
- The second landslip that had come down between H65 and the cabins on H72 and H73;
- A third landslip that had come down on the north-eastern side of H65 encroaching onto H63 and H64.

[30] When not down at the campground office, the Maclennans and Member of Public B stood around their campervan and talked with other campers. Travis Maclennan recalls that while he and Lisa were concerned about what had happened and thought that other campers near the base of the mountain should be warned and moved, there was no panicking. By then they had decided that they would probably have to wait until 7:00 am when they hoped the office would open. Around this time Member of Public B moved his vehicle from where it had been parked near H66, to beside where Lisa had moved and parked the campervan.

[31] As dawn broke and the light improved, the Maclennans could see the landslip that had hit their campervan. Other campers gathered around while they explained what had happened and why they had moved it earlier that morning. In the daylight they could see extensive flooding across the campground and the large pools of muddy water which had formed around the Harbour Amenities block. This is clearly evident from the photographs taken by Lisa and Travis Maclennan that morning. Their earliest

photographs were taken at 6:16 am and 6:17 am, and show the slips, and the blue tent belonging to Member of Public B with water pooled around it.[16] Shortly before 7:00 am Lisa took several photographs of the rear of their campervan showing the damage caused by the landslip.[17]

[32] Over the next two and a quarter hours, the volume of muddy water and debris flowing from the foot of the slope above the campground and particularly from the base of the third landslip (at H63 and H64), increased in volume eventually causing a stream of muddy water, rock and small debris to flow and be carried across and down the driveway to create an extensive and almost continuous carpet of mud and gravel on the driveway beside the Harbour Amenities block. However as can be seen from the photographs taken by the Maclennans at 6:16 am and 6:17 am, by that time the volume of muddy water flowing from the slope was already enough to have caused significant flooding around the amenities block, and muddy water was already flowing down the driveway.

[33] After Staff Member J received Staff Member D 6:37 am call and voice message alerting him to the landslide which had come down on the ocean beach side of the mountain, he accessed a Teams chat group used by asset managers from TCC's City Operations and Spaces and Places teams to initiate and maintain contact with several other TCC staff.[18] Staff Member J first message at 6:40 am advised: *Major slip on mount by camp site heading [there] now to meet* SM D. Staff Member O Staff Member O responded immediately: *Thanks for the heads up* SM J *Be safe up there.*

[34] At 6:42 am as he was driving to the campground Staff Member J tried to call Staff Member E Staff Member E but was unable to make contact. While still on the way he received a call from Staff Member N who had been monitoring the security cameras around Mauao from his home, and had seen the large landslide that

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16 This is shown in a photograph taken by Lisa Maclennan at 6:17 am set out in appendix two, photograph (d). Other photographs provided by Mr Maclennan are to similar effect: Lisa: 061658; 061619; 061707; 061710. Travis: IMG 1685; IMG 1892; IMG1893; IMG1894; IMG1895; IMG1896.

17 The photographs were taken at 6:54 am, 065459.jpg; 6:55am, 065505.jpg; 6:55am, 065509.jpg; 06:55am 065517.jpg.

18 The group being: Staff Members J, O and P

had come down over on the ocean beach side. Staff Member N sent Staff Member J a photograph of the landslide and said that he thought that the stairs leading up to base track would need to be closed. At 6:55 am Staff Member P Staff Member P messaged Staff Member J on the Teams chat saying: *Can you please check in with* Staff Member E *about this.* Staff Member J replied: *Can't get a hold of him but will keep trying.* At 6:58 am Staff Member P posted photographs of slips across the Base Track on the Pilot Bay side of the mountain and said: *Keep trying, but you can reach out to* Staff Member F [19] *re closing the base track.*

Staff Member Q *views the landslide on the ocean beach side and ocean side campground flooding*

Entire paragraph refers to Staff Member Q and Staff Member R

[36] Staff Member Q started monitoring the weather on Wednesday 21 January 2026. At 4:00 pm he received a call from Staff Member S advising that heavy rainfall was forecast. Staff Member Q told her that the campground staff had checked all the drains including that the outfall drain onto the ocean beach was clear. Staff Member S sent him a link to the MetService New Zealand, Bay of Plenty Recreational Marine Forecast.

[37] That afternoon and evening Staff Member Q had been watching out for any flooding developing around the Holiday Park, and particularly around the campsites on the ocean beach side which had a history of flooding. Shortly before 11:00 pm he called First Security Staff Member (who had two security guards working overlapping shifts at the campground between 9:00 pm and 4:00 am), asking them to make sure that they kept a look-out for any flooding or other damage. He told them to contact him if there was anything to report, regardless of the time. Later that evening, having not heard anything from the security staff, Staff Member Q went to bed and slept. [20] He woke at 6:30

19 Staff Member F

20 Staff Member Q says that he did not hear anyone knocking earlier that morning.

am on Thursday 22 January, checked the campground's beachfront CCTV camera on his cell-phone, and saw flooding all around the beachfront campsites. He dressed and was about to go to the flooded area, when he received a call from the TCC Call Centre and was told that City Operations and other TCC staff were out in front of the campground office. As he made his way towards the ocean side campsites, City Operations vehicles were arriving and driving through the campground. Staff Member Q went over to the ocean beachfront to see the flooding around the campsites, and saw that a large slip had come down and covered the stone stairs and ramp that provides access from the campground up to the base track. Staff Member Q used his phone to take several photos of the flooding around the campground and the landslip. These photos were taken between 7:21 am and 7:26 am and show a stream of muddy water flowing freely from the base of the landslide, across the stone stairs and out over the campground, forming extensive ponding around the campsites.

[38] Staff Member Q checked to see whether the outflow pipe onto the ocean beach was clear and functioning properly, and saw that the water which was pooled around the beachfront campsites was only draining slowly because of the amount of water flowing into the flooded area from around the base of the slip beside the ramp.

The Maclennans return again to the Campground office

[39] Travis Maclennan says that while waiting for the campground office to open he had made multiple calls to the campground number but had been unable to contact anyone. Shortly before 7:00 am he and Lisa accompanied by Member of Public B and his daughter, walked back to the campground office. Finding the office closed they waited.

[40] When Staff Member J arrived at the campground at around 6:45 am he parked his vehicle at the rear of the office. He put on his Hi-Viz jacket and as he walked around to the front of the office he saw some people knocking on the door. It was the Maclennans, Member of Public B and his daughter.

[41] When they saw Staff Member J wearing his Hi-Viz jacket, Lisa asked him if he was from the campground. He said that he was from the Council. Lisa told him that they had been trying for quite some time to contact the campground staff, had called

the TCC Call Centre, and used the intercom at the office, all without success. Staff Member J Staff Member J says that his conversation with Lisa was fairly brief: " *..probably two minutes*". He described her demeanour as being frustrated and agitated because she had not been able to get hold of anybody and there was no one from the campground around to speak to.

[42] Staff Member J says that Lisa told him that:

> …there was a little slip that had hit their caravan at around 4:30 am, that there was water everywhere and then a bigger slip on the beach side of Mauao came down. She said that she was worried about the bank situation where her caravan was parked. …. [and that] she expressed concern that people around the base of the Mount should be evacuated.

[43] From this account of their conversation it appears that Staff Member J may have misunderstood what Lisa told him. At the time that he had this conversation with her (around 7:00 am) the Maclennans had not yet been told about the large slip over on the ocean beach side of the mountain. I consider it more likely that when Lisa mentioned "a bigger slip on the beach side", she was referring to the slip which had come down onto H63 and H64, on the ocean beach side of the slip that had woken her at around 4:30 am and which was larger than the first slip.

[44] Staff Member J told the Maclennans that while he could not assist them, he would try to contact the campground manager to tell him about their concerns. Staff Member J asked the Maclennans if they were alright and whether they had moved their campervan, and Lisa told him that she had moved it away from their campsite. Staff Member J Staff Member J is clear that Lisa was not suggesting there was any need for an urgent response by the campground management, and she was not asking him to take any urgent action in relation to either the slips or the damage caused to their campervan. He says:

> I did ask her if everybody was alright and she'd moved away and she was, like, "yep, we're fine, I've moved my vehicle away" so I took that as that it wasn't extreme immediate danger and that there was no one else there. So that's when I kind of like said I'll find out – or see if I can find someone for you to contact. And then turned, walked away, pulled my phone straight out of my pocket, so only a couple of steps, and rang Staff Member N and said "SM N can you please find Staff Member Q contact number and get him to get someone or himself down here".

[45] Staff Member N found Staff Member Q phone number, called him, and relayed the message from Staff Member J – that there were people waiting for him at the campground

office, and that a slip had hit one of their caravans. Staff Member Q told Staff Member N he was aware of the situation, that there had been flooding on the low lying beachfront campsites, and that he was on his way. Staff Member N then relayed this message back to Staff Member J

[46] Staff Member J walked across the campground to where Staff Member D was standing near the ocean-side landslide, and saw that the steps were covered in mud, part of the walking track was gone, and the campground was flooded.

[47] At 7:06 am Staff Member N called Staff Member J and asked him to check the stormwater outlet on the beach side of Mauao, as he suspected it might be blocked and causing the campground to flood. Staff Member N said that he would come and meet Staff Member J Staff Member J over at the Pilot Bay boat ramp and they could walk over to the mountain together to assess the damage, before proceeding to inspect other damage across the city. Staff Member J injured his leg when checking the outlet and thereafter his mobility was somewhat restricted. At 7:20 am Staff Member J sent a message to Staff Member N via the Teams chat telling him to meet him at the Mount.

The Maclennans find Staff Member Q

[48] Travis Maclennan says that after talking to the man from the Council wearing the Hi-Viz jacket Staff Member J they were told by another woman staying at the campground that there had been a large slip over on the ocean beach side of the mountain. They then walked over to the ocean beach side with Member of Public B and his daughter to have a look. From the beach Lisa and Travis both took photographs of the landslip which had come down over the steps, and of the flooding around the caravans.[21] They then began making their way back through the campground towards their campervan and parted company with Member of Public B and his daughter. On their way they saw a man wearing a Holiday Park logo shirt. They thought that he could be the manager, and approached him to tell him about the landslip that had damaged their campervan. It was Staff Member Q

[21] These photographs were taken at 7:13 am. (Lisa: 071303.jpg) (Travis: IMG1897; and IMG 1898)

[49] Mr Maclennan says that when he and Lisa approached Staff Member Q he was speaking to some campers whose campsite was one of those surrounded by a large pool of muddy water, and he was joking with them about whether they should get free accommodation on the 'private island' their campsite had become. Mr Maclennan says that when Lisa approached Staff Member Q and said that he needed to come over to their side of the campground because there had been some slips there, and they had been trying to get hold of him all morning to come and see what had happened, Staff Member Q responded with a rather dismissive wave of his hand, saying: *I'll get there when I get there.* Mr Maclennan says that Staff Member Q appeared to show no interest in what Lisa was saying and that he did not ask them which site they were on. Mr Maclennan says that as he and Lisa walked away she was muttering: *We've been up since 4:30 am and can't get hold of anyone.* The Maclennans then went back to their campervan to wait for Staff Member Q

[50] Staff Member Q account of this conversation with the Maclennans differs. He says that he was approached by four people while he was looking at the flooding around the ocean beach campsites:[22]

> I was approached by 4 people that were staying over on the harbourside and [had] walked over, they said there [sic] camper had a bit of damage to the rear bumper site H66. The person on site H65 said his tent was slightly covered by a slip on one end of the tent. I said as soon as I was finished, I would come over directly to see you.

[51] In his interview with me Staff Member Q added some further detail:

> Well at that time there was a couple, three people come across from the harbourside, and they met me there. I said, "I'll – I'll just finish off here, and then I'll be – I'll come over and meet you". ……[H]65, they – they said, "oh we've moved our camper about 5 o'clock this morning down and parked it in front of [-] the harbour amenity block" parked it in these sites. …… So the tent on H66 was still there, but they weren't in it. That's what we were coming back to uncover the tent. There was a bit of dirt on that end of it.

[52] At 7:13 am Staff Member O posted another message on the Teams chat (with an accompanying photograph showing the flooded oceanside campsites) saying:

> Spoke to Staff Member Q and he is on his way to deal with damaged caravans. He said the drain on the beach was blocked but SM J looked and said it appears to be flowing.

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22 Member of Public B campsite with his blue tent was on H66, the Maclennan's campsite was H65.

[53] And at 7:46 am Staff Member P posted a message on the Teams chat saying:

> Just spoke with Staff Member E he on his way – I updated him on status to date

[54] It was not until 30 or 40 minutes later that Staff Member Q went to meet with the Maclennans. Before going to the harbour side to see the landslips that Lisa had told him about, Staff Member Q first spent some time taking photographs of the landslide on the ocean beach side and other photographs of the flooding in the ocean beach campground area (between 7:21 am and 7:26 am). At 7:21 am Staff Member O sent an email to the TCC Contact Centre which he copied to Staff Member P Staff Member J Staff Member J and Staff Member E. He said:[23]

> Good morning,
>
> Please be advised with the weather overnight a slip has occurred over the historic steps on the eastern side of the mount which is blocking access. Council staff are on site assessing the damage. We will keep you updated when more information is available.
>
> Regards, Staff Member O
>
> Staff Member O

[55] Travis Maclennan says that when he and Lisa returned from over at the ocean beach they saw that there had been a fourth slip which had come down on the north-eastern side of the third slip. While waiting for Staff Member Q they both took further photographs of the landslips which had come down first over H65, and later over H63 and H64. At 7:25 am Lisa took a photograph which appears to show the landslip that had come down while they had been away at the office and over at the ocean beach.[24] At 7:27 am Travis took two photographs showing the initial slip which had exposed a blue water pipe, and the third slip from which an increasing volume of muddy water was flowing.[25]

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23 Document 5721.
24 Lisa Maclennan photo: 072552.jpg.
25 Travis Maclennan photos: 7.27am IMG1691 & IMG1899.png; and IMG1692& IMG1900.png.

[56] At 7:37 am, Staff Member BP sent an email to the TCC "Executive" and Councillor A which she copied to Staff Member T and to Staff Member U Staff Member U advising:[26]

> Councillor A exec,
>
> We're in the process of closing off Mt Maunganui. The storm event has damaged tracks, caused slips and downed trees that make it unsafe for the public to access. Thankfully, as far as we know, nobody got hurt during the event.
>
> We will get temporary fencing and guards to ensure public safety, while prioritising the work to recover and investigate possible damage to caravans at the holiday park.
>
> If you have any issues or concerns, please raise them with me to allow the team to focus on the recovery.
>
> Thank you.

The Maclennans speak to Staff Member Q near the Harbour Amenities (ablution) block

[57] After the Maclennans had been waiting for him for almost 30 minutes, at around 7:40 am Staff Member Q turned up driving the campground golf cart.[27] He was accompanied by Staff Member J says that between 7:45 am and 8:00 am he saw Staff Member Q driving the golf cart through the campground near the hot pools from the campground office towards the Pilot Bay side of Mauao.[28] As Staff Member J had earlier injured his leg he asked Staff Member Q for a ride back to the ocean beach side of the campground where he was going to check on what had been set-up there. Staff Member J says that when he got into the golf cart, he suggested to Staff Member Q that they go first to see the damage along the top of the campground near the slip area and the Harbour Amenities block. Staff Member J says that as they headed towards the amenities block the

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26 Document 1542. The "Executive" includes the CEO and his leadership team.

27 The time this occurred can be reliably determined by reference to a photograph taken by a member of the public, Mr Colin McGonagle, at 7:42 am. This photograph is included in appendix two, photograph (f).

28 Staff Member J time (between 7.45 am and 8.00 am) is obviously mistaken, because the photo of them sitting together and driving away in the golf cart at 7:42 am (appendix two, photograph (f)) means that Staff Member J chance meeting with Staff Member Q which preceded the conversation with the Maclennans, has to have occurred a short time before 7.40 am.

campsites along the driveway above the block looked empty, apart from a single blue tent and the two cabins at the Pilot Bay end of that driveway.

[58] Staff Member J says that as they approached the amenities block he recognised Lisa Maclennan as the woman he had spoken to earlier that morning outside the office shortly after his arrival. She was standing near the corner of the amenities block with the man and his daughter he had also spoken to earlier. Staff Member J says that as the golf cart approached, Lisa Maclennan flagged them down. He says Lisa said that she had been banging on the office door and had been unable to get hold of anyone, and Staff Member Q responded by saying that was funny, because he lived on site. Staff Member J says that Lisa appeared very concerned and said that she had been warning people near the amenities block about the potential for further slips. Staff Member J says he asked Lisa whether everyone was safe and whether anyone was in the blue tent which was surrounded by a lot of water. He says the man with a young daughter, then said it was his tent and that he had taken all of his gear out of it. Staff Member J says:

> There was no one there but she told us that she'd been warning people. You know, she was concerned about the area and that she had been telling people to be wary and careful. But at that stage when we were there, it was only five of us there. There was no one else around.
>
> …and then I said to her "so everybody's safe" – again – "everybody's safe, you've moved your vehicle away" and she was "yep, yep, yep".

[59] Mr Maclennan says that when Staff Member Q and another man (Staff Member J) arrived in a golf cart, Staff Member Q looked up at the slips that had come down onto the nearby campsites and appeared visibly shocked. By that time there had been four slips into the campground in that area. Mr Maclennan says that although he and Member of Public B were present during this conversation, it was Lisa who did most of the talking to Staff Member Q Staff Member Q (who did not get out of the golf cart). She told him the landslip had caused some damage to the rear of their campervan. Mr Maclennan says that Lisa was "*quite calm at that stage as he* Staff Member Q *had turned up*" and without being asked, Staff Member Q had offered to refund their camping charges and replace the electric power cable which had been covered by the landslide. Mr Maclennan says that Staff Member Q said that they would get it all sorted, but he was going to check the rest of the area first, and would come back to them once he had. Mr Maclennan says with that, Staff Member Q and Staff Member J

Staff Member J then drove off together heading along the driveway above the amenities block towards the Pilot Bay side of the campground.

[60] Staff Member Q account of this conversation is as follows:

> I went and got the electric cart out of the maintenance shed, called into reception which we opened at 0730 hrs, spoke to Staff Member R to let her know what was happening then headed over to harbour to meet the guests on H65,66.
>
> 0740hrs Heading over to Harbour I picked up Staff Member J Staff Member J on the way he jumped in and came over with me. We saw the guests H65, 66, saw the tent. H65 had already moved there [sic] camper to in front of Harbour amenity facility As they were concerned about the slip which caused some damage to there [sic] back bumper. We saw the tent that had soil on one end. I said to the guests from both sites to come to reception I just wanted to check the rest of the park to see if there were any other problems damage etc. There was no one along the back sites from H61 to H70. The people in the tent didn't go back to the tent they stayed away.

[61] Referring to the slip that had come down into H65 Staff Member Q said that the area was very wet and that there was a lot of very muddy water, but "*there wasn't much there. It was just that tree just sort of fell down ... and you could see a little bit of slip there.*" He said that the Maclennans:

> …. just said there was a little slip just up here, must've came down on their bumper, and their – their power cord was still underneath a bit of dirt.....……
>
> And then I says, "look the reception's open. I'm just going to do the rounds. I haven't even checked up here yet" all up and around there, "and I'll meet you at the reception and we can discuss ..." because they had a bit of damage on their back bumper. ….

The 7:42am photograph of Staff Member Q and Staff Member J in the golf cart

[62] At 7:42 am, a member of the public, Colin McGonagle, took a photograph showing Staff Member Q and Staff Member J together in the golf cart driving along the driveway at the foot of the mountain, towards the cabins on H72 and H73. Staff Member Q was driving and Staff Member J was seated on the right hand side, wearing the Hi-Viz jacket. This photograph is reproduced below (with Mr McGonagle's permission):[29]

[29] The photograph was taken as a panoramic image and the full image (shown in appendix two, photograph (f)) shows a broader perspective. Note that the people standing on the far right of the panoramic image have been redacted for privacy reasons.



[63] In the foreground is Member of Public B blue tent sitting in and surrounded by a pool of muddy water on campsite H66. There are similar pools of muddy water further along the mountain side of the driveway and over campsites H67 - H71. The photograph also shows a landslip which had come down covering a large portion of campsites H69 - H70. This was the second landslip seen earlier by the Maclennans, which led them to go and wake the occupants of the cabins on H72 and H73. The photograph shows the sky is overcast, and that the rain had stopped.

Staff Member Q *and* Staff Member J *look at the landslip identified by the Maclennans*

[64] Staff Member J says that following their conversation with Lisa, he and Staff Member Q drove along the driveway past the Harbour Amenities block to look at the slip that the Maclennans were concerned about.

> [To] look at the slip and the other area – I said we'll just do a quick loop. Because he had – I felt like he had only just arrived so I just wanted to point out a few things to him. At that stage, I was just showing him areas and it was like I was almost, I suppose in a process, handing – thinking that he was going to then take it all on. Since he was there, he's the manager of the park and all that. He can make all those decisions. But I was just pointing out some areas.

[65] Staff Member J says that they looked at the slip which had come down onto H65 and also looked at the blue tent as they drove past (without Staff Member Q stopping). Staff Member J Staff Member J had noticed that an elderly couple was staying in one of the cabins on H72 and H73, and as they drove along the driveway towards the cabins, Staff Member Q asked him what he would do in the situation. Staff Member J says that he replied:

> I said I would probably evacuate the campers from the base where basically the blue tent was, along there, and I did point out the two cabins and said that probably needs to be - get those people probably somewhere else. ….. I would probably evacuate these people from here. … Basically the two [people] that were left in the cabins, because obviously there was nobody along here . ……..Pretty much those cabins, yeah. So I wasn't meaning evacuating the whole camp, I was just getting people away from the base of the camp – base of the mountain. ….. I pointed to the two cabins when I saw people moving in them and I just said "probably those two". ……. It was just kind of like "that's what I'd do".

[66] Staff Member J says that Staff Member Q commented, "*Oh yeah*" and continued driving past the cabins before heading back through the campground to take Staff Member J over to the ocean beach side where Staff Member J was going to check on progress with the track closures, and other related public safety measures that had been put in place. On the way Staff Member Q was stopped by another camper. When Staff Member J saw Staff Member V Staff Member V he left Staff Member Q and went with Staff Member V to co-ordinate track closure measures. Staff Member Q does not accept that he had any discussion with Staff Member J about evacuation of campers from the area as they drove along the driveway past the blue tent and towards the cabins on H72 and H73 following the meeting with Lisa Maclennan. Staff Member Q says that apart from the blue tent, that area of the campground they were driving past was empty of campers, and the occupants of the cabin mentioned by Staff Member J were already packing up to leave. I simply note their different recollections of what was said, and make no finding as to which is to be preferred.

Staff Member Q *does his "rounds"*

[67] Staff Member Q says that after telling the Maclennans that he would meet them at reception, Staff Member J accompanied him while he did his "rounds" in the golf cart checking for any other slips. He says he saw that a small slip had come down on the slope near the cabin on H73 which was the same place where it had happened every

year for the past three years. He says that he then dropped Staff Member J off back near the camp office.

[68] The Maclennans had a different understanding of what Staff Member Q had said he was going to do. Mr Maclennan says that he and Lisa clearly understood Staff Member Q to say that he would go and check the rest of the camp and then come back them, and that he did not tell them that he would meet them back at the camp office. And so they waited for him to return. While they were waiting for him Lisa took some more photographs. At 7:52 am and 8:01 am she took photographs of the slip that had come down onto H64 and H65, showing that the volume of muddy water and gravel debris had increased, and there was much more water lying around.[30]

Staff Member P *reports*

[69] At 8:24 am Staff Member P sent an email to Staff Member T and Staff Member BP SM BP to whom he reported under the Spaces and Places organisational structure.[31] He said:[32]

> Subject: Storm Event Known Info at 8.15am
>
> Morning
>
> I have the team out doing inspections at McFalls, Omanawa, the Coast Line & Cemetery. Over the day the team will visit as many sites as possible to check for damage or H&S issues.
>
> At this stage the most serious issue is the slips at Mauao (photos below)[33] we have actioned a full closure, will install fencing & security guards, we have advised the call centre, EOC & the Mauao Trust will be informed. More info will come in as they assess the site.
>
> I have asked for reports ongoing from the wider team as the day goes by so I can provide updates. All associated costs will be captured as "Storm Event"

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30 Photos - Lisa Maclennan: 7:52am 075249.jpg; 8:01am 080114.jpg. The photograph taken by Lisa Maclennan at 8:01 am is set out in appendix two, photograph (g).

31 Staff Member P reported directly to Staff Member T and indirectly to Staff Member BP

32 Document 1454.

33 The three photographs attached were: a photograph date/timestamped: 22.01.2026, 07:13 showing the ocean side caravan sites surrounded and in some cases under an extensive pool of muddy brown water; a photograph marked: Mauao Base Track; 22.01.2026, 07:00 showing a wet and muddy landslip over the Base Track; and a photograph of the 4WD track up Mauao covered by an extensive slip.

……..

Mount Camp Ground

Staff Member Q is managing campers & assessing the extent of damage, we've been advised there has been a slip come down into the campground – more info to come.

Mauao

Bottom of historic Steps washed away

4WD track washed out

TCC staff inspect the Base Track of Mauao

[70] As he had arranged, Staff Member N went and met Staff Member J near the Pilot Bay boat ramp around 7:45 am. Staff Member D was also waiting there. Staff Member P had called Staff Member N and told him that Staff Member E was on his way. Staff Member D Staff Member J and Staff Member N then began walking from Pilot Bay around the Mount base track. They got as far as Sandy Bay where they found that the slips across the track were too wide and deep to cross. Rather than retracing their route they decided to head up through the paddock to the water tower. By then, Staff Member E had arrived and he caught up with the others at the water tower. They inspected some damage in that area before heading back to the base track to meet up with a Mauao Trust member [redacted] then going to Sandy Bay to show him the slip. At 8:59 am Staff Member J received a message from Staff Member O via the Teams chat, asking him to go to the Hartford Avenue Reserve as the Council had been advised that it was badly flooded. The group then started making their way back towards Pilot Bay. At 9:30 am as they were walking past the stone jetty Staff Member J and Staff Member E both received telephone calls advising that there had been a large slip into the campground and ran ahead to see what had happened.

The Maclennans decide to check out and leave

[71] After waiting for quite some time – *we hung around for ages* - the Maclennans gave up waiting. Between 8:30 am and 8:45 am, they decided that although they had booked to stay another night they would check out and leave. Member of Public B and his

daughter went to the campground office with them. Mr Maclennan says that when they entered the office they were surprised to see that Staff Member Q was there. Mr Maclennan says that when Staff Member Q saw them enter he commented: *Oh, I tried to find you.* Mr Maclennan says that he and Lisa had not moved away from where they had earlier spoken to Staff Member Q

[72] Staff Member Q then arranged a refund of the Maclennans' camping charges and gave them a replacement electric power cable. Member of Public B was served by another staff member and he also received a refund of his camping charges. Member of Public B and his daughter then departed towards the nearby shops, and the Maclennans walked back up to their campervan to prepare to leave. By now the storm had passed, the weather had cleared and the sun was out. It was another classic summer morning at the Mount.[34]

[73] When the Maclennans arrived back at their campervan sometime shortly before 9:00 am they decided they would both have a shower before they left. At around 9:00 am Travis went into the Harbour Amenities block and had his shower. He then returned to the campervan. Lisa had said that she wanted them to empty the campervan toilet receptacle before they left. And when Mr Maclennan returned from his shower, she said that as he had just had a shower she would do it, and then go for her shower. Having emptied the toilet receptacle, Lisa then went into the amenities block for her shower and Mr Maclennan waited for her in the campervan. It was then around 9:15 am - 9:20 am.

The Maccanico family, Max Furse-Kee, and Natallia Seliatyskana's videos

[74] Fifteen year-olds Sharon Maccanico and her boyfriend Max Furse-Kee were the youngest victims of this unspeakably horrific tragedy. They had been taken by Sharon's parents for a summer camping holiday at the Beachside Holiday Park where they were booked to stay between 17 and 29 January. The Maccanico family were well equipped with camping gear and initially stayed in their tent on the ocean beach side of the campground. However on 19 January, with the arrival of some strong winds and the weather forecasts predicting heavy rain with red alerts in the coming days, Mr Carmine Maccanico and his wife Natallia decided to cut short their holiday and return

[34] The photographs taken minutes after the fatal landslide show a cloudless blue sky.

home. When Mr Maccanico went to the campground office to cancel the remainder of their scheduled booking, he was encouraged by a member of the office staff to stay, saying that although the weather forecasts were bad, rather than leaving and returning home, they had the option of renting a caravan or a cabin at the campground. Following this conversation Mr Maccanico and Natallia decided to rent a caravan to stay in until the storm passed and they could resume their camping holiday in their tent. After considering several options they decided to rent a caravan located on campsite H60 right beside the Harbour Amenities block. They stayed in the caravan on the nights of 20 and 21 January, and on the morning of 22 January with the rain having stopped and the return of blue skies and clear weather, they were looking to find a suitable campsite well away from the flooded areas to relocate to. After several visits to the camp office and after viewing several possible sites they had chosen a new campsite, and were getting ready to move.

[75] Earlier that morning Carmine Maccanico and Natallia had woken around 7:00 am. When she first stepped outside, Natallia noticed that the water lying around their caravan was now brown and muddy. The night before when she looked, the pool of rainwater around their caravan was virtually clear. Around 8:30am Natallia used her phone to make several video recordings showing the muddy water lying around the amenities block and the stream of muddy water and gravel flowing from the foot of the slope just above the amenities block, across the driveway towards and around the amenities block, and then on-down the driveway towards the hot pools. At one stage when videoing, Natallia approached to within several metres of the slope and videoed the heavily muddy water flowing freely from the foot of the slope. Earlier that morning sometime before 9:00 am, Natallia had spent around 30 minutes in the amenities block kitchen washing their dishes, and when she finished and came outside, she saw Sharon and Max standing near their caravan. Sharon asked her for the keys so that they could use the showers, and after getting some clean clothes to change into, she and Max both went off into the amenities block to have showers. It was now only several minutes before 9:30am.

The fatal landslide – 9:30am

[76] By 9:30 am the storm of the past days was well gone. The rain had stopped hours earlier, the sky had cleared, and it had become a fine, sunny, summer morning. Many campers had either left during or after the storm, or had moved away from the low-lying and flood-affected areas of the campground, and the campground was quieter than would be usual for that time of year. The campsites and the driveway along the top of the campground, beneath the slope of the mountain and beside the Harbour Amenities building, appeared largely empty.

[77] A minute or two before 9:30 am the slope above the Harbour Amenities block failed without any obvious warning. A large mass of saturated soil, colluvium, rock and debris slid rapidly down the slope. Within seconds it had engulfed the amenities building. Staff around the campground heard the same thing first — a loud crack, variously described as thundering or an "almighty roar" — and then saw the trees and slope sweep down onto and over the Harbour Amenities block and campsites below.

[78] A number of people were in or close to the amenities building at that time. As I have noted around 9:20 am Lisa Maclennan had just gone in to have a shower, as had Sharon Maccanico and Max Furse-Kee. Susan Knowles, Jacqualine Wheeler, and Måns Bernhardsson were also in the amenities building at this time.

[79] Family members of those trapped, other campers, members of the public, and TCC staff who were on site that morning, responded immediately and made frantic efforts to locate and rescue those trapped in the building. It was a chaotic scene as people arrived and desperately tried to locate anyone who had been caught in the landslide.

[80] Because of the chaotic nature of what occurred, I shall describe what happened through a brief account of actions of those TCC staff who responded and without any hesitation put themselves in danger by going onto the landslide and making desperate efforts to locate and rescue those victims caught in, or trapped by, the landslide. Their

conduct is justly characterised and commended as being undertaken with conspicuous bravery and humanity.[35]

Staff Member M

[81] Staff Member M mowing team had been rained off that morning so he rang Staff Member D went over to the campground to help and was involved in fencing the Pilot Bay cordon with Staff Member I At about 9:28 am he heard a crack, saw a pōhutukawa tree sweeping down the slope and watched the landslide strike the Harbour Amenities block "like it was hit by a missile". Staff Member M immediately ran towards the landslide and made a 111 call which lasted three minutes. He checked and assisted people in RV campers who were calling out, and seeing a partly-buried blue/green tent, cut it open with his pocketknife. There was no one inside it. He recalls Sharon Maccanico's mother screaming "they're both in there". He then went onto the landslide and waded waist-deep in liquefied mud, looking and digging and trying to find anyone caught in it. Staff Member M says that among the members of the public who had responded were two roofing contractors (surfers in their wetsuits preparing to head over to Matakana), who fetched a cordless drill from their vehicle and used it to remove roofing iron from sections of the amenities block roof which had been displaced by the landslide. Within minutes, the Mount Fire Brigade and the Westpac rescue helicopter arrived and FENZ then assumed control of the rescue efforts and subsequently stood the TCC staff down. Staff Member M observed Staff Member W Staff Member W help a bleeding woman from a camper. Staff Member F Staff Member F later organised counsellors and food at the TCC depot in Aviation Drive.

Staff Member H

[82] Staff Member H had been called by Staff Member D at about 6:30 am that morning and was the second person on site after Staff Member D He erected mesh fencing outside the surf club, then at Staff Member D direction drove through the ocean-side campground up past the shearing shed. He found the road had been completely washed out, and he

[35] Under the Terms of Reference the Review makes no findings on the emergency response after the landslide occurred. The accounts below are recorded to document the conduct of TCC staff who were present, not to assess the adequacy of the emergency services' response.

coned and barriered it off. Staff Member H closed the main stairway to the walking tracks, and spoke to members of the public who were still trying to go up onto the mountain. He then returned to the group gathered with Staff Member D and Staff Member F and was directed to go and close the four-wheel-drive track by the hot pools. He parked his vehicle at the bollards near the cabins on H91 and H92. From there he walked up the four-wheel-drive track to look for any other slips, and there met up with Staff Member E Staff Member D and others near the water tank on the south-western side of the mountain. Shortly before 9:30 am, after returning from the walk over the mountain he was standing back on the driveway talking with Staff Member X and several other people, when he heard the crack and saw trees come down the slope behind the Harbour Amenities block. He immediately ran to the slip, climbed up onto the displaced amenities block roof, and worked with the roofers who were using their cordless drill to remove the roofing iron. The missing girl's father (Carmine Maccanico), was up there with them and her mother was screaming for her daughter. Staff Member H continued his efforts until instructed to stand down by FENZ officers who had arrived and assumed control of the rescue efforts.

Staff Member J

[83] Staff Member J had joined Staff Member D, N, E and Mauao Trust Member walking along the base track and up to the water tank on the south western side of the mountain. Walking back with this group toward Pilot Bay he received a call from Staff Member V saying that a large slip had come down. He then hobbled to the slip, where Staff Member W was consoling the distressed parents of the young girl he was told was trapped. Seeing Staff Member H already on the amenities block roof, he climbed up and, with Staff Member H and two members of the public, assisted them to remove roof iron. One of these men was using a cordless drill and Staff Member J used a shovel to lever up the roofing nails. Staff Member J asked a young police officer to take the distraught father (Carmine Maccanico) down off the roof. Twice the group fell silent to listen for any sounds of anyone trapped by the landslide. He says the first time they did this he was fairly sure that he heard a muffled sound, the second time he heard nothing. Staff Member J says that he and a police officer working together held a section of the roof while others braced it, and at one point he saw what looked like a caravan roof-hatch in the mud below. After about 25 minutes, and out of breath, he came down

off the slip, and withdrew when the FENZ fire-chief stood down the non-emergency personnel on the landslip. Staff Member J subsequently reported these events to Staff Member O Staff Member O and Staff Member P

Staff Member N

[84] Staff Member N had spent the early morning monitoring the TCC security cameras from his home and acting as the communications hub, relaying messages on the asset-managers' Teams chat (with Staff Member J Staff Member O and Staff Member P Staff Member P He had phoned Staff Member Q at Staff Member J request to give him a message regarding damage being caused to a campervan (the Maclennans), and had arranged to meet Staff Member J at Pilot Bay to walk the base track and look for any damage. He drove from his home to the campground and met Staff Member J at about 7:45 am.[36] Staff Member N Staff Member N then accompanied Staff Member J and Staff Member D walking along the base track from Pilot Bay. They were later joined by Staff Member E and Mauao Trust Member. After viewing the damage to the track, the group separated during their return to Pilot Bay after Staff Member J Staff Member J and Staff Member E both received phone calls and went on ahead leaving Staff Member N and Mauao Trust Member walking at the back of the group. When they came over the crest in the track where they had a view towards the amenities block, Staff Member N saw dirt and trees but could not gauge the scale of what had just happened. Arriving at the landslide site it was, "chaos, screaming, yelling". Staff Member N first helped some Maori Wardens[37] move members of the public back, and seeing the two wetsuit-wearing roofers using an impact driver,[38] he phoned Staff Member P to tell him that a major landslide had occurred and it was likely people had been trapped. He then climbed onto the landslide and joined the dig with "hands, feet, everything you could pry with" as Fire Service crews arrived with chainsaws and pry bars. At their direction he checked caravans at the slip edge, ripping a window off one (empty) and relaying "all clear". Later Staff Member N was one of a group who pushed a campervan off the campground driveway to enable clear access for emergency vehicles. He was subsequently pulled

36 Staff Member N cell-phone and Teams timestamps provide a reliable timeline of the events he was involved in that morning.

37 While on his way to the campground that morning Staff Member E had telephoned a Mauao Trust member to advise them about the landslide and to arrange the attendance of Maori Wardens to assist with security and closure of the mountain to the public.

38 A heavy-duty power tool designed specifically for driving screws and loosening stuck fasteners.

back from the site by FENZ staff. Just after 10:00 am he checked his phone and saw that he had missed three calls from his wife, and rang her to say he was safe.

Staff Member D

[85] Staff Member D had received a call from the TCC call centre at about 6:09 am reporting a slip on the base track. He saw the slip as was driving along down Marine Parade and decided to close the mountain immediately. He mobilised his crew by phone calls to Staff Members G, I, L and K and others, and had tried unsuccessfully to reach Staff Members E, X and H were on hand and they maintained cordons. Staff Member M volunteered to help. The mountain was closed just after 8 am. Then between about 8:09 and 9:30 am Staff Member D Staff Member D had walked the base track from Pilot Bay with Staff Members J and N Staff Member E and Mauao Trust Member before reaching a slip they could not pass. He was walking back toward the vehicles when the landslide came down. He heard cracking noises and screaming, and ran toward the slip. He tried to find a way to get into the amenities building, but soon realised it was futile to continue. He says he then used his master key to open the bollards and chain gate so that the emergency services could get their vehicles in.

Staff Member E

[86] Staff Member E first became aware of the situation between about 7:30 and 7:45 am. He had missed an earlier call from Staff Member D who had been first on site at around 6:00 am and had already made the decision to close the mountain. When Staff Member E Staff Member E first looked at his phone earlier that morning he saw a message from Staff Member P Staff Member P advising that there had been a large slip on the mountain and that closure of the mountain was underway. He telephoned Staff Member P back and they both agreed that full closure of the mountain was the correct process in response to the large slip that had come down over the steps on the ocean beach side.

[87] Staff Member E then made his way to the mountain. On the way, and in accordance with his role as the Staff Member E he informed the Mauao Trust of the large-scale

damage and that closure of the mountain was underway, and he arranged for Māori Wardens to attend to assist with the closure.

[88] Staff Member E arrived on site at about 8:15 am. By then the weather was fine and clearing – "almost a bluebird day", which gave him a sense that there had been heavy rain overnight, even though conditions had since settled. He met up with Staff Member D Staff Members D, J and N, who had already carried out an initial walk over the base track on the Pilot Bay side of the mountain, and he joined them to continue assessing the damage. This group then walked the base track, viewing a number of small slips along the way, and then went up to the water tank. He took a call from Mauao Trust member Mauao Trust Member who had just arrived on site, and arranged to meet up with him. The group including Mauao Trust Member then went on around the base track and stopped at a large blow-out slip beyond Sandy Beach which had taken out the track and made it impassable. By about 9:00 am they had commenced making their way back, with the intention of returning to the ocean side.

[89] As the group was walking back and had reached the Pilot Bay jetty, Staff Member E says that either Staff Member D or Staff Member J received a call (he is unsure of who from) saying that there had been a large-scale slip in the campground. As the campground came into view, he saw the displaced roof of the amenities block and recalls saying words to the effect, "why is the roof there". He estimates the group he was with reached the landslide only about a minute and a half after it had occurred, and at a time when everything was still unfolding.

[90] Staff Member E says that at the slip face there was a great deal of commotion. He saw a man he assumed to be the father of one of the missing young people trying to look under the awning of the displaced amenities block roof. When the father stepped away in distress, Staff Member E looked himself in case there were cavities beneath, but he found that there was only thick clay. Staff Member E says that he was initially uneasy about people climbing up onto the roof as their weight could cause further instability, but when a member of the public produced a cordless electric drill and began undoing the roof-iron fasteners he joined several others trying to pull the roofing off, in case people were trapped beneath it. At the outset, he thought he might have heard people's voices, but with so much screaming and chaos he could not be certain.

[91] On hearing fire engines approaching, Staff Member E ran back to the Pilot Bay boat ramp and pulled out the bollards so that the fire engines could gain access, telling the crew the way was clear. He then followed the first firefighters back to the landslide, and at a police officer's request, he joined Staff Member N and Staff Member J in checking a caravan that had been pushed over. Staff Member E says he checked the rear of the caravan and confirmed that there was no one inside it. He then got back onto the slip and helped pull roofing off. He and another man freed a trapped power cable, after which someone warned that the roof was electrified and that someone had already received a shock.

[92] Staff Member E then telephoned Staff Member Q to ask him how the electric power could be turned off. Staff Member Q told him he had access to the power box, but no key. As Staff Member E Staff Member E had a universal key he arranged to go and meet him. However, because of a misunderstanding about which side of the slip each of them was on, Staff Member E then attempted to cross over the slip face to go and meet Staff Member Q. A decision he acknowledges was unwise. On his way across the landslide, he stepped into what he describes as a slurry, and sank into it up to his chest. He managed to crawl out. He then went to meet Staff Member Q going the long way round via Adams Avenue, and found him just as the Westpac rescue helicopter was landing. He and Staff Member Q then went to the electric power box, which Staff Member E opened with his key and the electricity was turned off. Staff Member E then ran back to tell the FENZ crew that the power was off.

[93] Shortly afterwards a senior FENZ officer directed everyone other than emergency personnel to get off the landslide. Staff Member E says that this direction was difficult for him, and also other TCC staff and members of the public who were searching for survivors, to accept. Along with the others he was moved back to a Police/FENZ cordon which had been established at the boat ramp and then together with the other TCC staff, directed by Police to go over to the surf club. On the way a police officer took a brief statement from him, which he signed digitally. At the surf club he reported what had happened to the Mauao Trust members gathered there. He then went to a tent set up on the Pilot Bay side for the Mauao Trust, and stayed there for the rest of the day. Over the following days he was engaged in assisting the rescue and recovery crews addressing cultural issues that arose, and helping to facilitate their

conversations with iwi regarding the tapu and archaeological significance of the landslide soil being moved or removed.

[redacted]

[94] [redacted] had been called by [redacted] at 7:17 am that morning, and from 7:43 am he had manned the upper gate near the old shearing shed, turning away groups wanting to go up onto the mountain. At about 9:29 am he heard an "almighty roar" and saw trees sliding down with mud and debris. He ran down the driveway past the hot pools into the campground. He phoned his wife at 9:29 am, and then phoned [redacted] at 9:30 am. This was the call that alerted [redacted], who was walking back from Pilot Bay. [redacted] then called his supervisor [redacted]. When he arrived at the landslide he saw that [redacted] and [redacted] were already there, soon to be joined by [redacted] and [redacted] consoling a family member, and saw that [redacted] was standing by the slip in tears. He helped rip off roof iron, fetched loppers and secateurs from his vehicle and handed the loppers to a police officer. He became concerned about live electricity wiring in the debris, and was told to stand down by a senior fire officer: "if you're not with the fire department, you're out of here".

[redacted]

[95] [redacted] had earlier met her team leader [redacted] on the main beach side, found everything there in hand, and had crossed to the Pilot Bay side, where she joined [redacted] at the four-wheel-drive track entrance, manning the cordon and counting walkers coming down off the maunga. She used the Harbour Amenities block toilets and, on the way back to rejoin her colleagues she spoke with the Italian father (Mr Maccanico), who was waiting nearby for his daughter. [redacted] had seen the man's daughter (Sharon) going into the block earlier. [redacted] then rejoined [redacted] and [redacted] along towards the cabins on H72 and H73. While there, she saw a small bank collapse behind the blue tent and walked back towards the Harbour Amenities block to warn the two teenagers she knew were inside it. Reaching the corner near the men's entrance, she heard a large cracking sound, turned and saw

the slope coming toward her. She told her workmate "we need to run", and she did. As the landslide flow slowed behind them and they turned back towards it, Staff Member X saw a young man (whom she described as being one of the young Swedish men), emerge out from landslide. He told her that his friend was still in the bathroom. Staff Member X helped him out and off the landslide, and then carried out a perimeter check around the landslide looking for anyone else who may have been thrown clear. She then helped with moving bystanders back to safety, and assisted Police to move the cordons back past Adams Avenue and down towards Pilot Bay. Later, Staff Member X sat and prayed and performed karakia with Travis Maclennan and the Maccanico family.

Staff Member AA

[96] Staff Member AA His standard work hours were 9:30 am to 6:00 pm. On the morning of 22 January 2026 he arrived early, at about 9:20 am, having left home earlier than usual because he had heard there were road closures around the city and expected the traffic to be bad. He says he had a feeling that something might happen given the amount of rain, because something usually did. On arrival he asked what the plan was for the day, and Staff Member Q told him there had been a landslip which had come down and covered part of a tent, and that they would get some shovels and go and clean the dirt off it.

[97] Shortly before 9:30 am Staff Member AA went to the campground maintenance shed, to get the work vehicle and clear its tray so that dirt from around the tent could be loaded onto it. However, when he went to leave in the vehicle he found that a City Ops vehicle was parked across the accessway, and he was blocked in. He went to find the driver and found a City Ops man walking near site H62 and asked him to move the vehicle, which he did.

[98] Staff Member AA then drove the campground ute up the driveway towards the H66 tent site. He did not know exactly which site the tent was on, and so he was following Staff Member Q who had gone ahead in the golf cart. Staff Member AA had left the maintenance shed area a minute or so after Staff Member Q and was not driving immediately behind him. As he came over the crest on the driveway he looked down and saw only dirt and trees where the amenities block was supposed to be. He pulled up behind Staff Member Q who

had stopped a little further on, and Staff Member Q told him the landslide had just happened, and he had seen it come down. On Staff Member AA account, the delay at the shed getting his vehicle out meant that neither he nor Staff Member Q had arrived at the tent (MoP B Member of Public B) which they were going to collect, when the slope failed.

[99] As Staff Member AA got closer he saw water flowing out from around the edge of the landslide and into the hot-pools carpark. He thought the landslide may have had broken stormwater pipes, and was concerned that it might be sewer water and present a safety risk. From that point Staff Member AA says he did what he could. With Staff Member Q he began crowd control, ushering the gathering crowd of people back from the slip. From the side of the landslide he was on (the ocean beach side) he could not see the amenity block or any people climbing onto the landslide. On someone's suggestion (he cannot recall whose), he ran back to the maintenance shed to get "danger" tape and strung it across the entrance of the driveway leading to the landslide to keep people out. He told Staff Member Q he would go and get the keys to unlock the removable bollards so that the emergency services could get their vehicles in, but then found that the emergency services had simply cut the bollards out. When Police asked for a list of the guests staying at the campground he went and got it for them, and thereafter spent the rest of the day helping campers pack up and evacuate the campground.

Staff Member Q

[100] Staff Member Q says that shortly before the landslide occurred he was intending to go with Staff Member AA to clear soil from the landslip off Member of Public B tent. He had the electric golf cart parked beside the manager's office, and was about to leave when he heard the landslide come down.

[101] Staff Member Q describes hearing a sudden noise, and then yelling, screaming and swearing, with people running down the Adams Avenue side toward the hot-pools carpark. His first thought was that there had been an accident. He looked down the street and could not see anything, then looked up toward the slope where the earlier slip had happened and saw a pōhutukawa tree sliding down the hill. At that point he jumped into the golf cart and drove up the driveway towards where he had seen the tree sliding. As he went further he found that the driveway he was on had been blocked

by the landslide which had come down covering it. In front of him a caravan was lying on its side across the driveway. A caravan from the H60/H61 site (the Park's own rental caravan), had been carried further down by the landslide, and another was sitting on top of a huge pile of dirt in the hot pool. He went up to the side of the landslide which had come down over the driveway and saw that the Harbour Amenities block had been completely covered, and people were already climbing up onto it looking for anyone who was trapped.

[102] Staff Member Q says that he then saw a second slip come down on top of the first one. He says that seeing this he called out to the people on the landslide debris to get off, and that others also realising that more of the landslide might be coming down were also shouting at the people who had climbed up onto the landslide to get off it. Members of the surf club soon arrived and Staff Member Q asked them to stop people from coming any closer, and he made his way around from the ocean beach side of the landslide to the Pilot Bay side. In order to get there he had to drive back around the hot pools and along Adams Avenue. When he got to the other side of the landslide he could see the full extent of the slip and realised that he and Staff Member AA had been very lucky as the tent on H66 that they had been going to deal with, was in the direct path of the landslide. He puts the time at around 9:40 am.

[103] Staff Member Q says that by this time a group of City Ops staff, who had been checking slips around Mauao, were on site in their high-visibility gear, and they were able to help control the area and keep people back. Staff Member Q says that he understood that 111 had already been called and that numerous other members of the public had also called the emergency number. The Police and emergency services arrived very soon afterwards.

[104] Staff Member Q describes his role thereafter as being one of continuous coordination and communication. He telephoned Staff Member AB to tell her what had happened, and she came to the campground. He says it seemed as if his phone did not stop: he was talking to Police and Fire; checking on his team; helping reception; and checking on guests and letting them know that the park was closed and that it would

39 Staff Member AB and Staff Member Q

need to be evacuated. Staff Member Q continued to be occupied in this way for the rest of the day, eventually leaving the campground at about 5:30 pm. At about 6:00 pm he received a call from the Police and returned to the landslide scene to answer further questions about the layout of the Harbour Amenities block, before leaving again at about 6:30 pm.

Staff Member Q *photographs taken at 9:32 – 9:46 am*

[105] The landslide had come down across the campground driveway Staff Member Q was using when on his way to get the tent from H66, forming an obstacle several metres high and blocking the way ahead. Before moving from that ocean beach side of the landslide to make his way around to the Pilot Bay side of the landslide, Staff Member Q took four photographs on his cell-phone. All four are timed as having been taken at 9:32 am, around 2-3 minutes after the landslide occurred.

[106] The first photograph shows the ocean beach side of the landslide and a view over the top of it looking towards the Pilot Bay side of the campground. In the distance a ute can be seen parked on the driveway running towards the cabins on H72 and H73. The next three photographs show a caravan pushed over by the landslide onto its side and views from the driveway looking down into the hot pools area. The water in and around the hot pools is discoloured and muddy. In the last of this sequence of photographs, TCC staff (identifiable by their orange coloured jackets) are seen in the hot pool area and three men (one wearing a TCC shirt) are up on the slip and appear to be searching for any sign of survivors.

[107] After making his way around to the Pilot Bay side of the landslide, Staff Member Q then took a further sequence of four photographs. These photographs are all timed as having been taken at 9:46 am. They show the landslide scene with Police, FENZ, TCC and some civilian first responders on and around the landslide.

Staff Member AC

[108] Staff Member AC He was on duty at the Transport Operations Centre (TOC) from 5:08 am that morning, monitoring road and motorway

flooding. At 6:44 am via Police radio, he heard about the ocean beachside landslip on Mauao, and from the CCTV monitors he was viewing at the TOC he could see TCC staff were on site. At 9:33 am, from Police radio communications he heard about the landslide which had come down over the Harbour Amenities block, and viewed it through a camera. The camera had been operating on an automated cycle and had not captured and recorded the onset of the landslide at about 9:27am - 9:28 am. Staff Member AC Staff Member AC immediately took manual control of the camera and relayed the severity of the landslide to Police (via the shift Senior Sergeant), and emailed images to officers on the ground to help identify missing persons. Noticing continuing small slips, he notified Police and supported their decision for full evacuation of the campground and beach. He saved and downloaded the camera footage.

The Emergency Operations Centre (EOC)

[109] I interpolate here a brief account of these events drawn from my interviews with relevant EOC staff and EOC records. On Tuesday 20 January 2026, following consultation with other Bay of Plenty emergency operations controllers regarding the forecast extreme weather event, the TCC Emergency Operations Centre was stood up. The Duty Controller on 21- 22 January was Staff Member AD commenced work at 5:30 am on 21 January, and was engaged in EOC pre-activation steps prior to it being stood up at 11:30 am. Later that day Staff Member AD received advice from a member of the TCC staff working in the Operations Team Staff Member S that she had heard something about a holiday park being evacuated, and after doing some 'digging around' she had ascertained that it was the campground at Waihi Beach and the evacuation was because of flooding. Learning this, Staff Member AD asked Staff Member S Staff Member S to contact all the coastal camping grounds within the TCC area to ask whether they had any issues and whether they needed any assistance. He explains that because of the forecast of heavy rain he was concerned about the possibility of flooding, not landslides, affecting the campgrounds.

[110] Staff Member AD was Duty Controller from the time the EOC was stood up at 11.30 am on 21 January and continued until 2:00 pm on 22 January 2026. His extended time as Duty Controller was much longer than was usual. In the ordinary course another Duty Controller would take over at a shift change, but because two of the other EOC

Controllers were on leave at the time, and as another had just completed their weekend as Duty Controller, Staff Member AD elected to continue on when the shift change occurred and decided to retain a 'skeleton staff' at the EOC during the night. These were: a Staff Member AE a Staff Member B – working from home); an Staff Member AF and two Welfare Officers, one of whom was Staff Member C

[111] Around 5:00 am on Thursday 22 January, Staff Member AE (who had received the information from Staff Member B), advised Staff Member AD that there had been a landslip at the Holiday Park campground and a tent had moved. He reported that the people affected were out of the tent, were 'okay' and just needed some alternative accommodation. Staff Member AD was told that the male caller had unsuccessfully tried to contact the campground manager, before contacting the TCC Contact Centre, did not seem panicked, and all he was after was just trying to find somewhere to 'put his head down' for the rest of the night. Thereafter, the issue of the caller from the campground needing temporary accommodation was left to the Welfare team to deal with, and so far as Staff Member AD was concerned, the matter did not again arise or require his further attention.

[112] At 5:05 am,[40] Staff Member AD was informed by Staff Member AE that Staff Member B had been contacted by a police officer and advised that Police were evacuating people at Welcome Bay following a landslide, and that a search was underway for two people who were missing. Staff Member AD explains the Welcome Bay area where this occurred is right on the TCC / Western Bay of Plenty District Council boundary, and there was initial uncertainty as to whether it lay within the TCC jurisdiction. He says that this uncertainty initially led to what he described as being "quite a scramble", as Staff Member AE made urgent efforts to contact the police. However, after his initial calls were not answered, Staff Member AE eventually contacted and spoke to Inspector Zane Smith who advised that the police were liaising with the Western Bay of Plenty Emergency Management team because the address affected by the landslide was located in their area. Once that issue was resolved the EOC monitored but was not centrally involved in that operation.

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[40] This 5.05 am time was noted by Staff Member AD in his personal Emergency Management log.

[113] Sometime later, by which time it was daylight, Staff Member P arrived in the EOC and advised that Spaces and Places were closing the Mount as there were some major slips all over the base track and it was considered unsafe for people to be on the mountain. Staff Member AD explains that he regarded the decision by the Spaces and Places team to close the base track as being part of their 'business' and appropriate. He says that as described to him, the decision to close access to the mountain was taken to prevent members of the public going to places on the mountain where they could possibly be harmed, and the slip previously reported by Travis Maclennan was not regarded as being a matter of major concern, and prior to the fatal landslide it had not come up again as being a matter requiring the attention of the EOC.

[114] At around 9:30 am during a telephone conference with other BOP Group emergency controllers the day shift Response Manager and Marty Grenfell (TCC Chief Executive) advised Staff Member AD of the major landslide into the campground, campervans had been moved and that people could be trapped. The EOC thereafter functioned to liaise with police, BOP Group emergency services and TCC teams and staff in relation to the response to the Mauao landslide.

02

The Terms of Reference

The Terms of Reference

[115] The Terms of Reference (TOR) of this Review require me to conduct an independent and impartial review, in accordance with the rules of natural justice, and considering the interests and respecting the families of the six victims who lost their lives in the landslide.[41] I am required to conduct the Review in a manner that does not interfere with any ongoing support or recovery activities, and with due regard to the confidentiality, privacy and other interests of natural persons and third parties.

[116] The TOR sets out the scope of the Review and requires me to review and report on:

- the relevant facts and circumstances that led to the landslide on 22 January;
- what was known by Tauranga City Council about the area of land on Mauao affected by the landslide (the affected area), [and] how the Council identified, assessed and managed any risks prior to the state of emergency;
- the information received and decisions and actions taken by Tauranga City Council and the Emergency Operations Centre in relation to the affected area during the state of emergency;
- whether Tauranga City Council and the Emergency Operations Centre took appropriate and timely steps in relation to managing hazards associated with the risk of landslide in the affected area;
- whether there were any other actions that Tauranga City Council and the Emergency Operations Centre could have taken to reduce the risk of harm from landslide in the affected area;
- actions that Tauranga City Council took in the immediate aftermath of the landslide – until FENZ[42] took operational control of the affected area.

41 The Terms of Reference are set out in appendix one.
42 Fire and Emergency New Zealand.

[117] Pursuant to the TOR I am required to make recommendations of any steps or systemic improvements that may assist the Council in preventing or responding to similar future events, including recommendations regarding:

- Governance, stewardship and decision-making arrangements relevant to the affected area on Mauao, including the respective roles of elected members, management, and external advisors;
- Identification, assessment, monitoring and management of risk, including geotechnical, environmental, and public safety risks;
- Policies, plans, processes and practices relevant to land stability, access, asset management, monitoring and hazard mitigation;
- Information, advice, and assurance, including the use of expert reports, internal reporting, escalation, and record-keeping;
- Operational controls and interventions, including access management, works, monitoring activities and responses to identified risks;
- Communications and engagement, including with elected members, statutory partners, mana whenua (where relevant to the process), stakeholders and the public;
- Preparedness arrangements immediately prior to the landslide.

[118] The TOR stipulates that the Review will not make findings or recommendations regarding:

- the actions of bodies other than Tauranga City Council and the Emergency Operation Centre, except to the extent they are relevant to the actions and decisions of Tauranga City Council;
- any actions relating to the emergency response to the landslide after it occurred;
- civil, criminal or disciplinary liability of any person.

03

Overview chronology



Overview chronology

May 1999	Dr Richards' report *Mauao Stability Assessment Mount Maunganui, Tauranga.*to TDC.
9 April 2000	Significant rainfall event, resulting in approximately 20 slips around Mauao.
16 October 2000	TDC staff visit landslip site on Mauao discovered by a shepherd – land slip approximately 5 metres wide by 3 metres deep, involving approximately 30 -50 m^3 of soil.
18 May 2005	Unprecedented rainfall event: 346.8 mm, resulting in 40+ individual slips on Mauao.
28 July 2005	Avalon Industrial Services Ltd report *Mauao slopes 2005; Zone 6 Southern campground and hot pools Rockfall hazard and risk assessment* to TCC.
2 August 2005	Avalon report *Mauao Slopes May 2005 Flood damage & Slope remedial works* to TCC.
10 August 2005	Avalon report *Mauao slopes 2005; Zone 6 Southern Campground and hot pools Rockfall hazard and risk assessment* to TCC.
Late 2005	180 mm fire main trenched up and across campground slope (no geotechnical assessment).
17 July 2006	Avalon report *Mauao Slopes: May 2006 – Rockfall & Landslide Risk Review* to TCC.
17 March 2009	Heavy rainfall event, resulting in up to 12 landslides along Mauao base track..
19 March 2009	Terrane Consultants Ltd report *Slips, Mauao Base Track* to TCC.
29 April 2009	Terrane report *Mount Maunganui Motor Campground Upgrading Project – Geotechnical Assessment Report* to TCC
August 2010	Tonkin and Taylor report to TCC (Tauranga City Aquatics Ltd)
28-29 January 2011	High rainfall event: up to 200 mm, resulting in 8 large landslides on Mauao.
30 January 2011	Tonkin & Taylor inspected Mauao and identified a total of 63 landslips, of which 7 were large (20 -100 m^3 of debris) and 2 were major (>100 m^3)
3 March 2011	Tonkin & Taylor presented to Mauao Steering Group relating to January rainfall and slips.
20 January 2014	Avalon *Mauao slopes monitoring report for December 2013* to TCC.
8 December 2015	Avalon *Mauao Slopes; Monitoring Report for November 2015* to TCC.
5 April 2017	Large drop out landslide (approximately 14 m x 10 m) closes base track. Followed several days of heavy rain fall as part of ex tropical cyclone Debbie.
April – August2019	Trees felled and removed from Mauao (no geotechnical assessment).
August 2020	Avalon *Mauao Slopes; Monitoring Report for August 2020* to TCC.
August 2021	Avalon *Mauao Slopes; Monitoring Report for August 2021* to TCC.
16 November 2022	WSP report *Mauao Base Track - High Level Qualitative Slope Stability Risk Assessment* to TCC.
1 March 2023	WSP report *TCC Slip Inspections for Council Reserves* to TCC.
13 May 2023	Tonkin & Taylor provided spreadsheet re climate hazard risk for the campground to TCC.
22 September 2023	WSP *Tauranga Landslide Susceptibility Study – Technical Report* to TCC.
1 December 2023	WSP report *Natural Hazard Risk Assessment – Mount Holiday Park* to TCC.
18 March 2024	Meeting between TCC staff and WSP staff regarding *Natural Hazard Risk Assessment.*
December 2024	TCC engaged HD Geo (on Avalon's recommendation). Avalon assists in handover.
6 June 2025	HD Geo *Mauao, Mount Maunganui, Geohazard Review Report* to TCC.
7 October 2025	HD Geo *Mauao, Mount Maunganui, Geohazard Monitoring Report* to TCC.
4 November 2025	Email exchange between TCC and HD Geo staff re further assessment for Holiday Park, with intervening phone call. No steps taken by TCC following this to engage HD Geo.
21 January 2026	MetService issues Heavy Rain Warning for Bay of Plenty for 24-hour period from 9 am 21 Jan to 9 am 22 Jan, forecasting a further 180-240 mm of rain.
22 January 2026	First landslip impacting the campground reported to TCC at approximately 4:43 am.
	Further landslides around Mauao subsequently reported or identified by TCC staff.
	Second campground landslip - between H65 and H72 and H73 (before 7:00 am).
	Third campground landslip - H65 encroaching onto H63 and H64 (before 7:00 am).
	Fatal landslide engulfing the Harbour Amenities Block (around 9:30 am).

04

What was known

by Tauranga City Council about the area of land on Mauao affected by the landslide (the affected area), [and] how the Council identified, assessed and managed any risks prior to the state of emergency?

What was known by Tauranga City Council about the area of land on Mauao affected by the landslide (the affected area), [and] how the Council identified, assessed and managed any risks prior to the state of emergency?

[119] The relevant facts and circumstances occurring between the declaration of the state of emergency and the landslide occurring on 22 January are covered in the first section of this report. This section addresses what was known by TCC about the area of Mauao where the fatal landslide occurred, and how it identified, assessed and managed *any risks* including landslides, in the period prior to the declaration of a state of emergency on 21 January 2026

[120] As set out in the overview chronology, TCC had received numerous expert geotechnical reports from different consultants relating to the risk to members of the public using the walking tracks on Mauao and occupying the campground over more than 25 years. I set out below the key aspects of the reports received and the actions (or inactions) of TCC in response.

Dr Richards' reports – May 1999 & July 2005

[121] On 31 May 1999, Dr Laurie Richards, a Rock Engineering Consultant, provided Tauranga District Council (TDC),[43] with a report titled *Mauao Stability Assessment Mount Maunganui, Tauranga.* The main focus of Dr Richards' report was the risk presented by rockfall from the slopes of the mountain. He noted that his report followed a request from TDC for him to conduct an overview of the stability of the slopes on Mauao, and explained his understanding of the purpose of the project as being:[44]

> To undertake an overview of the north-eastern to south-eastern slopes of Mount Maunganui to ascertain their present stability, assess the risk they may present to the hot pool and camping ground complexes and walkway networks and recommend a short to long-term management strategy for ongoing remediation of the slopes and/or additional investigation to be undertaken.

[122] In his report Dr Richards noted the risk of boulders being dislodged from the mountain, and observed that there were a number of local hazards directly around the

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43 Tauranga District Council was redesignated as Tauranga City Council as from 1 March 2004.
44 Dr Laurie Richards, *Report on Mauao Stability Assessment* (31 May 1999) page 1.

western edge of camping sites 93-98 to the south of the hot pools complex.[45] He also addressed the risk of landslides:

> **3.3 Old landslides in colluvial slopes** [46]
>
> The landslide scarps essentially cover all of the side of Mauao exposed to the ocean and would have formed in response to erosion of the toe of the colluvial slopes by rising sea levels. The lower parts of the talus slopes would, in any event, have been less stable because of the water seepage from springs around the 30m elevation on Mauao.
>
> The old landslide surface directly above the Ocean Camp was inspected (Figure 17). There was no evidence that the landslide was moving at greater than normal creep rates for soil – in particular there were no observable tension cracks or active scarps. The lack of activity in the major landslide zones could also be confirmed from examination of the aerial photographs (Section 31).
>
> Despite the lack of any significant signs of mass movement, two observations of the slide area were of concern:
>
> > Sinkholes or depressions could be seen in a number of locations (e.g. in the Old Stone Steps gully – Figure 18) indicating that piping channels may be eroding through the colluvium and may give rise to blowouts near the toe of the landslide.
> >
> > The sides of the landslide gullies are often very steep and small failures of the sides would not directly affect the camp site. **However during periods of heavy rain, these failures could block the surface runoff and subsequently fail creating high-speed debris flows down into the camp area.** (emphasis added)
>
> The susceptibility of the remnant landslide features [and] slopes to debris flows when the ground has been disturbed has been noted in Section 2.3 above. The slopes are closely grazed by sheep and bare ground is evident in a number of locations.
>
> **3.4 Frontal lobes of landslide**
>
> The gross stability of landslides is often very sensitive to small changes in the stability of the frontal lobes. Examination of the aerial photographs has indicated that a number of small slumps directly above the Base Track have been active since at least 1953. Examples of these

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45 A copy of the Beachside Holiday Park campground information sheet with diagram showing the numbered camp sites is set out in appendix 2, document (a). It shows that camping sites 93-98 are located on the lower slopes of the mountain, behind and above the Harbour Amenities block and near campsite H65 which was where Lisa and Travis Maclennan had their campervan on 21-22 January 2026.

46 Loose unconsolidated material derived from primary tephra (volcanic ash) deposits that has moved down slope by gravity driven processes – soil creep, sheet wash, rain-wash, or shallow slope failures and re-deposited on lower slopes. A heterogeneous mix of weathered tephra, and residual soil, typically silty/sandy and pumice-rich, deposited as loose mantles on the lower and middle slopes. They are highly sensitive - Tauranga halloysite-rich tephric colluviums tend to support steep stable slopes under dry conditions.

> are shown in Figure 19. These are slow-moving features and are not considered to present any significant hazard to users of the Base Track.
>
> Caravan sites in the Ocean Camp from near the entrance of the Base Track to about site 109 are located directly in front of an over steepened, undercut section of the landslide (Figure 20). The height of the undercut is up to 3 m, is very steep and is likely to be continually saturated with seepage from the slopes above.
>
> The nature of colluvial material (heterogeneous and poorly sorted) is such that assessment of the mass parameters is very difficult, and with the available information, there is little point in carrying out conventional slope stability analyses. However, based purely on the nature of the site and its geomorphological setting, **the siting of caravans and other forms of holiday accommodation in this area is considered to be imprudent with respect to potential failure of the frontal lobe and likelihood of further debris flows.**
>
> **The risks of injury or fatality from slope failures to sleeping persons in fragile accommodation (tents/caravans) is quite high and the owners/operators of such facilities would have a duty of care to ensure their safety. It is likely that there might be a much higher requirement for duty of care to occupiers of camp facilities than to those walking or jogging around the mountain.** (emphasis added)

[123] Included in Dr Richards' report was a 1988 aerial photograph of Mauao upon which he had marked the landslide scarps on the eastern side of the mountain which he described as being clearly shown on the photograph. The marked scarps include large landslide scarps extending across the area above the Harbour Amenities block.[47]

[124] Dr Richards also described landslide runout and referred to a methodology for assessing the risks associated with sites located close to steep hillsides which depended on the height of the slope failure and the total horizontal distance traversed by the slide resulting in runout from the toe of the slope. His recommendations included:[48]

> Remove caravans from the areas of Sites 101-109 at the Ocean Camp and maintain a horizontal clear area beside any steep cut of three times the cut height.
>
> Caravans should not be returned to this area unless the cut slopes are stabilised.
>
> The camp grounds should be inspected in detail and a hazard plan prepared showing the nature and location of any potentially dangerous features which compromise safety in these areas. Based on the brief survey described in this report, several locations of unacceptable hazard have already been noted. Affected camp sites should be vacated until the hazard is eliminated.
> …

---

47 Dr Richards (1999) Report – Figure 10. Doc 32982 page 35.
48 Pages 11 and 12, paragraph 5.2.

> The slopes above the camping ground should be retired from grazing and planted with shrubs and trees that would provide root reinforcement and buttressing to the superficial soils. This would make the slopes less liable to erosion and debris flow activity.

[125] Following Dr Richards' report, TDC proceeded to undertake the remedial works he recommended at a cost of $32,000. In a memorandum dated 4 October 1999 recommending approval of unbudgeted expenditure "to protect campsites from slips and falling debris off Mauao", Staff Member AG noted that:[49]

> The proposed expenditure of $32,000 on the remedial works will enable Council to meet its obligations to campers and will also secure revenue streams for the years to come. The affected sites are at the rear of the Ocean Camp. Ocean campsites are generally more sought after by campers than some other sites in the Pilot Bay and Harbour camps.

[126] The following year on 26 October 2000, Staff Member AH sent a memorandum to the Area Officer: Mount Maunganui/Papamoa. As this memorandum addresses several matters which I consider are relevant to the 22 January 2026 landslide I set it out in full. Staff Member AH wrote: [50]

> Following our visit to the landslip site at Mauao on 16 October 2000, please find below my comments on the slip and some photographs for your files.
>
> **Description of Failure**
>
> The slip is a failure of part of a large headscarp of a historic or relic landslide, refer Plate 1 attached. The scallop shaped landforms around the margins of Mauao shown on Plate 1 are indicative of past instability. The relic landslide backscarp is near vertical and about 5-6 m in height at this location. The slip is about 15 m^2 (=5m wide by =3m deep) in plan area and probably involved about 30m^3 to 50 m^3 of soil. The recent failure seems likely to have been triggered by heavy water flow through a large natural pipe within the colluvium, refer Plate 2. There is also a collapsed sinkhole about 1m in diameter and 1m deep which is about 2 m back from the new slip and inspection of this hole revealed a natural pipe at the base of about 300mm in diameter leading back up slope and on the other side of the hole towards the head scarp of the new slip. This phenomenon is consistent to the natural pipe that probably triggered the slip above the camp site in 1998 and the suggestion of sinkholes referred to by Laurie Richards in his Mauao hazard report.
>
> There is a large debris trail down slope of the slip that has run out some 50m+ and probably flowed down onto the base track another 20 or so metres below the bank shown on the photograph. A 1m diameter colluvium boulder was also likely to have dislodged during the slip and deposited immediately below the slip, refer Plate 3. The ground up slope of the slip is

[49] Doc 78281.
[50] Doc 32982 page 5.

hummocky which is often a sign of creep, refer Plate 4. There is also evidence of numerous depressions suggesting there are or have been numerous natural pipes within the colluvium in this area.

Although the slip was only discovered recently by a shepherd, I suspect the slip occurred during the 9 April 2000 rainfall event. I noted during my report following an inspection soon after the 9th that along with the 20 or so other slips that had affected the track elsewhere that an extensive flow of debris material had flowed over an escarpment above the base track itself and onto the shoreline below. I did not attempt to establish the cause of the debris flow at the time due to other slip problems that required immediate attention. I believe the reason the debris moved so far is that [its] debris failed into a natural overland stormwater flow path which was concentrated due to size and natural concave shape of the historic landslide scarp. In these circumstances the soil and mud mix to form a very fluid slurry. **From my experience overseas it is common for fluid debris to travel long distances at high velocities in these or similar circumstances**. It is interesting to note that the vegetation existing at the toe of the large landslide scarp did stop or trap some of the debris.

Suggested Actions

In view of the numerous similar relic landslide features around Mauao it is not practical to implement measures to prevent slips occurring in the future. It would also be impossible to reliably predict where the natural pipes exist. In addition, experience has shown that **slips typically occur during heavy rainfall** when the track below is unlikely to be heavily occupied. With this in mind I recommend a "do minimum" risk management approach, namely:

- I recommend the slip scarp be hand trimmed to remove the steep sections of the head scarp and overhanging portions.

- I also recommend the scarp is grassed to reduce erosion of the bare soil.

- The ongoing effect of the natural pipe is difficult to gauge – it could provide the source for ongoing erosion and scouring. I therefore recommend you inspect this area after heavy rainfall events to establish if some erosion protection works are required. This is more a management issue.

(emphasis added)

[127] On 3 November 2000 Staff Member AH made some handwritten notes on the Richards' report recording that he had copied it to several other TDC staff. On Figure 10 of the Richards' report it appears Staff Member AH drew several circles on the aerial photograph of Mauao to show where he recommended trees should be planted. These were the areas above the ocean side of the campground identified by Dr Richards in his report. Staff Member AH Staff Member AH wrote:[51]

[51] Doc 32982 page 10.

> Further consideration on the recent slope issue is that "trees" should be planted in the old landslip valleys above the camp site. They will serve to act as a natural barrier to debris flows. Happy to meet on site and discuss.

Avalon Industrial Services Ltd Reports (2003 - 2025)

[128] Following a fire on Mauao in January 2003 which revealed unstable looking slopes previously covered by vegetation, Dr Richards was again engaged to prepare a report. He visited the site with Staff Member AI on 19 February 2003, and subsequently recommended that specialist rock scaling and a further stability investigation be undertaken.[52] In early March 2003 following Dr Richards' recommendation, TDC engaged Avalon Industrial Services Limited[53] (Avalon) to carry out a geological rock slope investigation and rockfall hazard assessment, to prepare a report on the rock stability, and make a proposal for possible remediation and stabilising works and a future rock scaling and monitoring regime.[54] Written by Engineering Geologist, Neil McHugh, Avalon produced an interim report to TDC on 21 March 2003 and a further report on 7 August 2003 titled: *Mauao Rock Slopes & Rockfall Hazards*.[55] This report was focussed on the risk of rock falls and stated: [56]

> The purpose of this report is to provide a record of the condition of the rock slopes at March 2003 and give some proposals for possible remediation /stabilisation works and a future rock scaling /monitoring regime.
>
> This report is concerned with rockfall from the steep slopes which burned off in the January 2003 fire and its scope does not include colluvial /mass slips on the lower angles [sic] slopes or the bushed areas.

[129] From around July 2003, TDC engaged Avalon to carry out regular monitoring on Mauao, and commissioned a series of further reports from Avalon relating to rock fall hazards.[57]

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52 Dr Richards' report dated 20 February 2003.
53 Avalon Industrial Services Limited traded under the name, "Avalon Consulting". Its principal was Neil J McHugh, B.A. M.Sc, (Engineering Geologist).
54 Avalon was engaged by Staff Member BN
55 Doc 44249.
56 Doc 44249 page 1.
57 Doc 44249.

The 18 May 2005 rainfall event

[130] On 18 May 2005, Tauranga received what was an unprecedented maximum 24-hour rainfall of 346.8 mm causing extensive flood damage around the region. This followed significant prior rainfall of 144 mm over 24 hours on 3-4 May 2005, and a total autumn rainfall of 751mm (the highest since records commenced in 1898).

[131] The NIWA National Climate Summary described this weather event:[58]

> 17-18 May. A phenomenal, unprecedented high-rainfall flood producing event affected Bay of Plenty, particularly from Tauranga to Matata. Heavy rainfall occurred between 11pm on the night of the 17th and 8pm on the night of the 18th, during which time there were 6 hours with rainfall exceeding 30mm per hour, and one with 58mm. Tauranga Airport recorded massive 346.8 mm of rainfall in 24 hours. This was well above any other daily rainfall total there in records which commenced in 1910, but comparable with those recorded for shorter durations in 17 April, 1948, when 95, 146, and 212 mm was recorded in 1,2, and 6 hours respectively. ……
>
> A state of emergency was declared on 18 May in Tauranga and Matata …

[132] TCC commissioned Avalon to investigate and report on the extensive rockfall, surface scour, and over forty individual slips and dropouts caused by the extreme rainfall.[59] Avalon produced three reports dated 28 July 2005;[60] 2 August 2005;[61] and 10 August 2005.[62] The 28 July 2005 report titled: *Mauao slopes 2005; Zone 6 Southern campground and hot pools Rockfall hazard and risk assessment,* was primarily focussed on the rockfall issue, but nevertheless included a *Brief comment on mass slips* with an accompanying photograph showing the location of two typical mass slips located immediately above the campground and adjacent to the Harbour Amenities block, and made the following observations :

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58 Quoted by Avalon in its report No:0534 B, titled: *Mauao Slopes May 2005 Flood damage & Slope remedial works* (2 August 2005). Page 3. Doc 51038.

59 These Avalon reports were commissioned by [redacted] (see Avalon - 2 August 2005) page 1 paragraph 1.

60 Avalon Consulting. Report No:0534A. *Mauao Slopes 2005; Zone 6, Southern campground and hot pools, Rockfall hazard & risk assessment.* (28 July 2005).

61 Avalon Consulting. Report No:0534B. *Mauao Slopes May 2005 Flood damage & Slope remedial works* (2 August 2005) Avalon Report 0534B. Doc 51038.

62 Avalon Consulting. Report:0534A (Issue 2) *Mauao Slopes 2005; Zone 6, Southern campground and hot pools, Rockfall hazard & risk assessment.* (10 August 2005) Avalon Report 0534A (Issue 2). Doc 33540.

> Photograph 6 indicates historical circular mass slips in the colluvial slopes immediately above the campground (others are also present). **These events appear likely to have been over five times larger than the 18 May 2005 slip** on the south western slopes and **probably released a fast liquified debris flow.**
>
> **Should such an event now occur above the campground the consequences could be extremely serious**.
>
> In some locations the toe of the colluvial slope has been excavated to create level [camp] sites. Such excavations reduce stability.
>
> Further site investigation has been recommended and could include geophysics such as a resistivity survey in an attempt to determine colluvial thicknesses and location of watercourses and springs.
>
> Other investigation techniques applicable could include installation of piezometers to monitor groundwater and detailed engineering geological logging of exposed sections through the colluvium
>
> In addition to defining the geology, estimating frequency of slip events will be critical. Identification and dating of ash shower beds or dating of organic material within the colluvium could be of some value in this.
>
> (emphasis added)

[133] The second report (2 August 2005) was titled: *Mauao Slopes May 2005 Flood damage & Slope remedial works.* In this report Avalon set out details of the May 2005 rainfall noting that 346.8mm was recorded over 24 hours, with an estimated return period of 150 years. Avalon commented on each of the 52 separate slips it had identified, and noted that numerous soil slips had occurred on the lower slopes, many of which had destroyed areas of the Base Track. This report noted that the largest single mass slip (between the Base and 4WD tracks in the south west) involved an estimated 8000m^3 of material, with the next largest involving around 250 m^3 of material.

[134] In its third report dated 10 August 2005, titled *Mauao slopes 2005; Zone 6 Southern Campground and hot pools Rockfall hazard and risk assessment*,[63] Avalon examined only the rockfall risk, and noted that it was preparing but had not yet completed a further report, titled: *Mauao Slopes 2005 Preliminary Mass Slip*

[63] Avalon Consulting, Report:0534A (Issue 2) *Mauao Slopes 2005; Zone 6, Southern campground and hot pools, Rockfall hazard & risk assessment.* (10 August 2005) Doc 33540

Assessment & Revised Risk Assessments. The Executive Summary of the 10 August 2005 said in relation to the rockfall risk:[64]

> The flood damage has refocused attention on what has been demonstrated to be a very real hazard. It is recommended that investigation of catch fence options for protecting the campground from rockfall be given new priority.
>
> Priority must also be given to investigation and assessment of the potential risks of debris flow from **mass slips,** which now appear likely to be significant. Preliminary work on this is currently underway and will be reported in due course. (emphasis added)

[135] The 10 August 2005 report repeated the several paragraphs and the warning contained in Avalon's 28 July 2005 report headed: *Brief comment on mass slips,* with the accompanying photograph showing an aerial view of the Mauao slopes immediately above the campground marked with bold red lines to indicate the *very approximate locations of two typical historical mass slips*. The report said:[65]

> Photograph 6 indicates historical circular mass slips in the colluvial slopes immediately above the campground (others are also present). These events appear likely to have been over five times larger than the 18th May 2005 slip on the south western slopes **and probably released a fast liquified debris flow.**
>
> Should such an event now occur above the campground the consequences **could be extremely serious.**
>
> In some locations the toe of the colluvial slope has been excavated to create level [camp] sites. Such excavations reduce stability.
>
> A preliminary investigation of the potential risks from mass slips is currently being undertaken and will be reported in due course. (emphasis added)

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64 Avalon Consulting, Report:0534A (Issue 2) *Mauao Slopes 2005; Zone 6, Southern campground and hot pools, Rockfall hazard & risk assessment.* (10 August 2005) Doc 33540, Executive Summary page (i).

65 Page 7

Avalon Report 17 July 2006

[136] The following year, Avalon addressed the issue of landslide risk in a report dated 17 July 2006, titled *Mauao Slopes: May 2006 – Rockfall & Landslide Risk Review.* The introduction stated:[66]

> Landslip hazard was briefly considered some years ago and was evaluated as a low risk. The May 2005 flood event included one large slip on Mauao's lower South West slopes which prompted Avalon to re-examine the potential for slips.
>
> Mauao's lower slopes form an almost continuous series of slip scars, **some of which would have released very large debris flows into what is now the campground.**
>
> The May 2005 flood was (approximately) a 1 in 100 year event. **A very preliminary assessment shows that if a similar slip occurs with this frequency then slips may represent a greater threat to the campground than rockfall.**
>
> Further investigation is required if we are to better understand the landslide process, hazard and risk. Investigation should aim to determine the soil material properties, hydrology, rockhead profile and above all, the age of the scarp features.
>
> It is recommended that absolutely no earthworks or drainage works be carried out in or above the campground without consideration of the potential consequences.
>
> (emphasis added)

[137] Included in this 2006 report is another copy of the aerial photograph which had been included in two of the 2005 Avalon reports, which identified and highlighted the presence of two large slip scarps located directly above the campground. It includes the area of slope which was to fail 20 years later on 22 January 2026,[67] and is reproduced below.[68]

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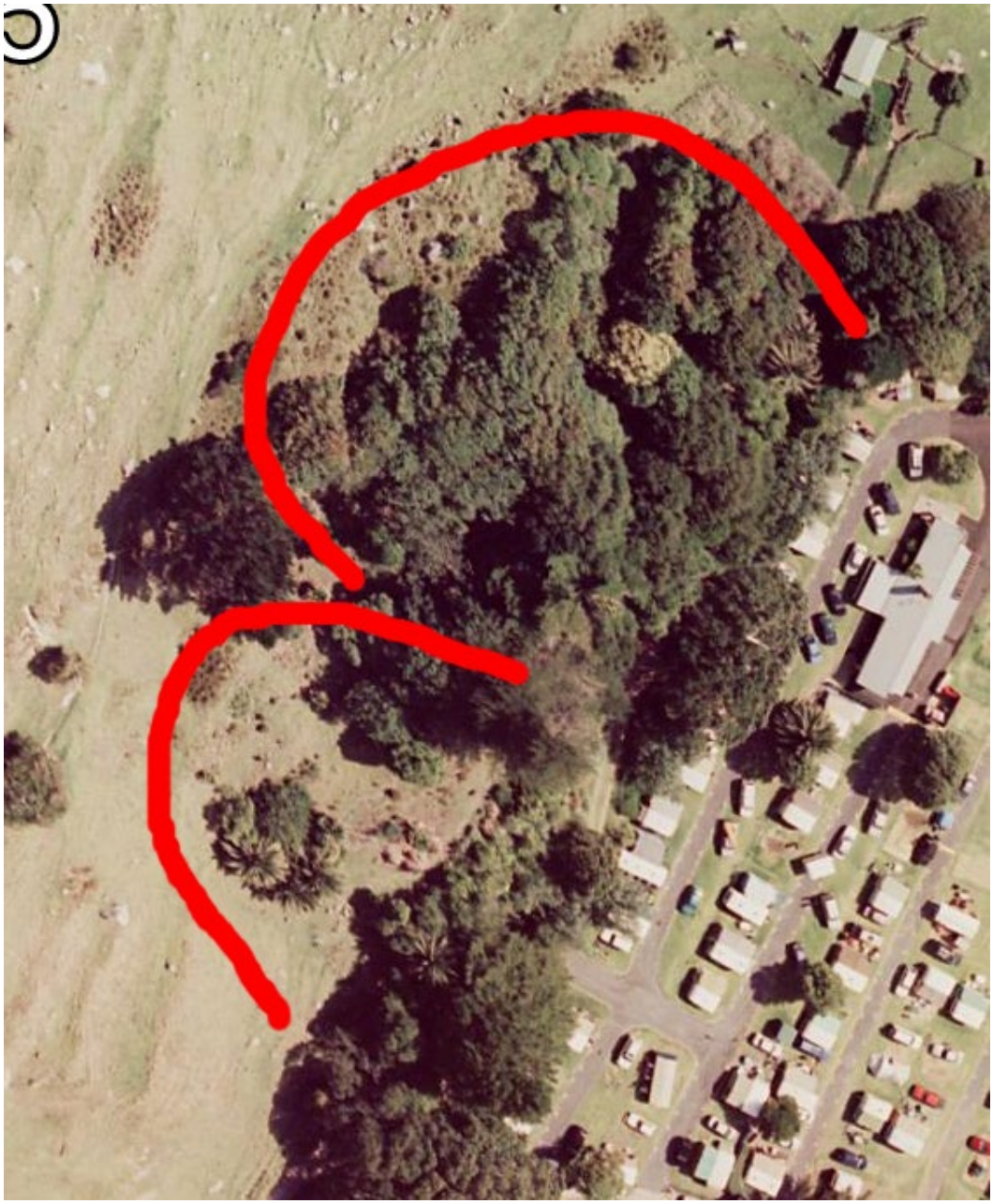
66 Avalon Consulting, Report, Mauao Slopes: May 2006 – Rockfall & Landslide Risk Review (17 July 2006). Doc 32741. Executive Summary page (ii).

67 Doc 32741, paragraph 9.1 Photo 29 *"Slip scarps above campground"*

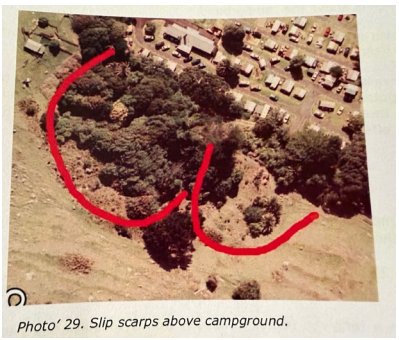
68 A larger copy is included in appendix two, photograph (b).



[138] Avalon again recommended to TCC that an investigation should be undertaken with the aim of determining the age of Mauao's lower landslip features. The report noted the likely frequency/interval of a major rainfall-triggered slip of 8,000m^3 occurring above the campground was 500 years, but given the potential consequences and uncertainty, recommended that it was worth taking the analysis further. The report stated that an 8000 m^3 slip from the slope above the campground would cover 30 campsites, and the vulnerability of people in a tent or van in the flow path would be *"quite high"*.[69]

[69] Page 44, paragraph 9.3, Doc 32741.

[139] Referring to the large slip scars situated above the campground, as identified in the aerial photograph, the report repeated and expanded on Avalon's 2005 observations and recommendations:[70]

> **9.1 Hazard**
>
> Avalon's 28/7/05 report "*Mauao Slopes; Zone 6 Hazard and Risk Assessment*" briefly discussed the possible slip threat to the campground.
>
> Photograph 2 indicated slip scarps in the colluvial slopes around the base of Mauao. Photograph 29 below shows major slip scarps immediately above the campground.
>
> 
> *Photo' 29. Slip scarps above campground.*
>
> **These slip events appear likely to have been over five times larger than the 18th May 2005 slip on the south western slopes** (see Photograph 16) and **probably released a similarly fast moving, liquified debris flow.**
>
> **The present day consequences of such an event could clearly be extremely serious**.
>
> We currently have very little knowledge of the potential for, and likely frequency of, these types of events.
>
> In some areas of the campground the toe of the colluvial slope has been excavated to create level camp sites. Such excavations reduce natural slope stability.
>
> Further site investigation has been recommended and could include geophysics such as a resistivity survey in an attempt to determine colluvial thicknesses and location of watercourses and springs.
>
> Other investigation techniques applicable could include installation of piezometers to monitor groundwater and detailed engineering geological logging of exposed sections through the colluvium.

[70] Page 43, paragraph 9.1, Doc 32741.

In addition to defining the geology, estimating frequency of slip events will be critical. Identification and dating of ash shower beds or dating of organic material within the colluvium could be of some value in this.

9.2 Frequency

The May 2005 floods appear to have been an event with a return period somewhere between 35 and 150 years (depending on how the data is analysed; the longer period accumulations being the most relevant here).

For the sake of simplicity maybe we can assume 100 years. This event triggered one slip of 8,000 m^3 (We will not consider the smaller events).

The portion of Mauao's colluvial apron with slip scarps is approximately 2,000m in circumference, 400 m of which is above the campground.

A simple calculation suggests a rainfall triggered slip of 8,000 m^3 might occur above the campground every 500 years.

500 year events are generally the maximum return period event that would be considered but, given the potential consequences and uncertainty it is worth taking this analysis further. Also, less intense rainfall, in conjunction with earthquake for example, could have similar effects.

9.3 Consequences

An 8,000 m^3 slip above the campground would cover; say 100x40m area to 1m deep, if 50% of the material crosses the boundary.

The campground has around 250 sites over 400 x 75m therefore the slip might cover say 30 campsites.

The vulnerability of persons in a tent/van in the flow path would be **quite high**; say 0.5.

If we assume 50% occupancy and four persons for 12 hours per site the at any time there will be **30 persons in the path of the flow.**

9.4 Risk estimation

The incremental risk for a one week stay can be estimated ……

Incremental risk = 1.6E-6

This is an order of magnitude greater than the rockfall risk calculated for the campground boundary sites.

9.5 Fatality frequency & risk evaluation

Every 500 years 30 persons will be in the path of the flow and 21 will be killed. This equates to one fatality every 24 years. Therefore fatality frequency = 4E-2.

For rockfall in the campground we had a return period of 879 years, a frequency 1E-3 therefore the risk from a debris flow may [be] greater than from rockfall.

Society also tends to view multiple fatality incidents differently to single fatalities, generally regarding them as less acceptable.

Of course these values are all currently very provisional and simply show that the risk from landslip may be worthy of further consideration.

…….

9.6 Risk treatment

It is not possible to be specific as the risks are as yet too poorly understood. However, to give some examples:

1 Passive options:

- **Accepting the risk**; this requires the calculated risk to be within the determined acceptable or tolerable range.
- **Avoiding the risk**; would in this case mean closing areas of the campgrounds.

2. Active options:

- **Reducing the likelihood;** could theoretically be achieved by slope drainage.
- **Reducing the consequences**; could be achieved by defences such as walls.
- **Warning systems**; are unlikely to be applicable.
- **Monitoring**; is recommended as it will increase our knowledge.

9.7 Recommendations

Further investigation is required if we are to better understand the landslide process, hazard and risk.

> Investigation should aim to determine the soil material properties, hydrology, rockhead profile and above all the age of the scarp features.
>
> Appropriate investigation techniques would be likely to include detailed mapping and profile logging, radiometric dating and geophysics.
>
> **It is strongly recommended that absolutely no earthworks or drainage works be carried out in or above the campground without serious consideration of the potential consequences.**
>
> ……..
>
> CONCLUSION & RECOMMENDATIONS
>
> ……
>
> Landslip hazard appears to possibly present a greater threat to the campground than rockfall and requires further consideration.
>
> Any excavation at the toe of a slope reduces stability. **It is strongly recommended that no earthworks or drainage works be carried out in or above the campground without serious consideration of the potential consequences.**
>
> (emphasis added)

17 March 2009 rainfall event and landslips

[140] On 17 March 2009 another heavy rainfall event triggered up to 12 landslides along the southern half of the Mauao Base Track. Terrane Consultants Ltd conducted a landslide inspection on 18 March 2009 and provided a short report to TCC recommending remedial work principally by removing the slip debris.[71] Terrane was subsequently engaged by TCC to prepare a further report in relation to proposed upgrading of the campground by the construction of cabins in the north-western corner of the campground, directly below the eastern slopes of Mauao. Under the heading *Slope Stability Hazards,* Terrane's report (dated 29 April 2009) stated:[72]

> Soil-and-debris slide/flow failures

[71] Terrane Consultants Ltd, *Slips, Mauao Base Track* (Ref 3071), 19 March 2009. Referred to in HD Geo report 6 June 2025, page 9.

[72] Terrane Consultants Ltd, *Mount Maunganui Motor Campground Upgrading Project – Geotechnical Assessment Report* (29 April 2009).

In addition to the rockfall hazard there is the potential for mass movement (land slippage) within the middle and lower slopes on Mauao. The potential mechanisms include similar size and scale to previous slips on Mauao such as shallow-seated slide/flow failures within the near surface colluvium and other slopewash soils, as well as batter failures along the cut batters at campground level.

Some smaller, more recent gully features are also present, related to recent scour and slope instability.

Tauranga has been affected by a number of extreme rainfall episodes over the past 10 years or so. These resulted in a number of soil or regolith failures around Mauao, mainly within the cut batters and gullies adjacent to the base track but including others scattered elsewhere. There have been relatively few failures within the grassed mid-slope areas such as those directly upslope of the proposed cabins.

The [existing] cut barriers in the vicinity of the proposed cabins are either unsupported or faced with old retaining walls which clearly have limited ground retention capacity.

In terms of the risk of soil slide /flow failures to the occupants of the proposed cabins:

- The velocity of a soil slip is fundamentally lower than a rockfall event. This contributes to significantly lower vulnerability of the occupants;

- Based on the size of past slip events, a rockfall fence can be expected to intercept most, if not all, of the debris; and

- In the event of an extreme event that overtopped a rockfall fence, the material would flow through the gap in the line of cabins.

"**Deep-seated" instability**

There are two, possibly three, large scallop-shaped indentations within the lower slopes on the north-eastern and eastern sides of Mauao. These have the appearance of ancient "deep-seated" landslide scarps.

While the features are of a reasonable size, factors such as the well-developed soil profiles within the scarps and the lack of debris lobes indicate they probably occurred at some time in the geological past, most likely due to toe erosion during times of higher sea level (and within more adverse climatic conditions than present).

The risk of this type of failure is judged to be extremely low. Notwithstanding this, it would be appropriate that this be confirmed during the detailed design stage.

…….

Tonkin & Taylor report – August 2010

[141] In August 2010 Tonkin & Taylor were engaged by Tauranga City Aquatics Ltd[73] to undertake a geotechnical assessment for a proposed redevelopment of the Mount Maunganui Hot Pools. The proposed site was located on the south western side of the hot pools complex and generally between the Harbour Amenities block and Adams Avenue.[74] Tonkin & Taylor addressed the risk of landslides, stating:

> **Landslides**
>
> A number of landslide features are present around the foot of Mauao. These features can be clearly seen in aerial photographs. Historical aerial photographs provide a record of the development of these features from 1977 to present. To the northwest of the campground a number of landslide features are apparent that seem to be associated with springs just above base track. The headscarps of these landslides have not regressed significantly upslope since 1977, but slope failures immediately above the base track have been occurred [sic] within the last two years.
>
> A large relic landslide is also present at the base of Mauao behind the proposed development. This landslide is approximately 120 m wide and has a steep back scarp (approximately 40 degrees). It is vegetated over the majority of its area with mature trees. It does not appear to have changed significantly since 1977. No areas of seepage or springs were observed within the landslide during our walkover. The landslide appeared dry and inactive. Some scour was noticed below tent sites at the base of the landslide, but this is likely to have been caused by stormwater runoff.
>
> The closest part of the slope to the proposed development is approximately 25 m away. The slope here is approximately 8m high and 33 degrees. The complex is at the limit of the runout distance from a landslide in this area and any debris would have to cross a road.
>
> As for the rock fall hazard we have carried out a qualitative assessment of the risk posed by landsliding on the proposed hot pools complex in accordance with AGS guidelines.[75] This is based on a visual appraisal only. Following the guidelines we would consider the likelihood of a landslide affecting the hot pools as "**Unlikely**". The consequence of a landslide impacting the development would be "**Medium**" i.e. there would be significant damage to part of the site requiring large stabilisation works. Consequently, we consider the likelihood of the landsliding affecting the hot pools is to be "**Low**".
>
> It is important to note that this risk rating applies to the northern part of the new development. The southern part of the development is further away from the slope and partly protected by the existing ablution block. The risk of landsliding affecting the southern part of the proposed structure is considered to be "**Very Low**".

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73 Tauranga City Aquatics Ltd is a TCC controlled entity.

74 Tonkin & Taylor report, page 1 – Figure 1 – *Site Location*. Doc 32974

75 Australian Geomechanics Assessment Society Sub-Committee on Landslide Risk Management (2000). Landslide Risk Management Concepts and Guidelines.

(emphasis in original)

January 29 2011 rainfall event and landslips

[142] Overnight on 28-29 January 2011 the Mount Maunganui area experienced up to 200 mm of rain. A subsequent report by Tonkin & Taylor noted that the rainfall resulted in about 80 mass movements with eight large landslides causing visible displacement of sediment and closing tracks.[76] This rainfall event was noted in an internal TCC memorandum titled: *Mauao Slope Failures 2011*, prepared by TCC staff member Staff Member AJ following an inspection of the landslip damage on Mauao he undertook with Staff Member AI of TCC. In his memorandum dated 30 January 2011 Staff Member AJ wrote:

> The slope failures occurred during or after a period of intense rain, possibly up to 200mm overnight, following a similar amount of rain five days earlier. There were many springs and large surface flows around the slopes four hours after the rain ceased.
>
> **Slip above north end of camp ground**
>
> This slip occurred in a narrow spur where the end of the spur has been cut away to form the base track and a camp site. It occurred after sunrise and debris flowed across the base track and partially flattened one small tent. The slip was about 5 m wide and excavated about 4m of soil at the top leaving a high vertical head scarp. There was one tension crack about 300mm behind the head scarp and some minor cracking along both edges of the very steep sides of the void. ……
>
> The slope failure was probably the result of a rapid increase in ground water pressure combined with an over-steepened toe.
>
> It was considered that as the water pressure within the spur had been relieved there should only be small failures of the head scarp in the short term. It was recommended that the two tents below the slope could be removed, provided someone observed the head scarp while this was carried out. The area was then to be cordoned off until long term stabilisation is carried out. The tent site below the slip should probably be permanently abandoned.
>
> In light of this slip and previous failures in the slopes above the camping ground, it is suggested that the construction of a debris collection bund along the back boundary of the camping ground be considered.

[76] See WSP report (3.12.2023) at para 4.5.2 page 19 – Doc 107810, and Report of TCC staff: Staff Members AI and AJ (30.01.2011) – Doc 108930.

> The complex geology of Mauao, with loose boulders in an ash matrix, lava flows, voids etc, appears to encourage concentrations in subsurface water flow which are difficult to predict and renders conventional slope stability analysis procedures impractical.

[143] The January 2011 rainfall event was also referred to in a July 2025 report prepared by WSP for TCC titled: *Tauranga Landslide Slope Hazard (IDC Zones)*[77] *Study – Addendum Report: Mount Maunganui / Papamoa Update.*[78] In a section headed: Trigger and Failure Mechanisms, the report stated:[79]

> In areas such as Hopukiore Mount Drury, rhyolite slopes may be prone to localised failures, especially where weathered rhyolite interfaces with overlying volcanic ash or colluvial deposits. These zones are vulnerable to rockfalls and shallow landslides, particularly during periods of intense rainfall or seismic activity. During an intense rainfall event in January 2011 associated with Cyclone Wilma, Mauao experienced multiple slope failures (Martin & Brideau, 2014; NIWA, 2018). At least eight large landslides occurred on Mauao comprising of rhyolitic material and colluvium (Martin & Brideau, 2014). These failures were triggered by elevated pore water pressures resulting from the heavy rainfall.

[144] On 3 March 2011, Tonkin & Taylor made a presentation to the Mauao Steering Group in relation to the 29 January 2011 extreme rainfall event and multiple slips of Mauao.[80] Tonkin & Taylor noted that it had inspected the mountain on 30 January and 1 February 2011 and had identified a total of 63 landslips, of which 7 were large (having debris between 20 -100 m^3), and 2 were major (having debris more than 100 m^3). The Tonkin & Taylor presentation report outlined the remedial options for repairing the damaged tracks. In dealing with the *large landslips* over the Base Track, Tonkin & Taylor noted:

> Head scarps are up to 12m high,16m wide, with debris run out distances [greater than] 100m, [and] debris volumes [greater than] 200m^3.
>
> There are similar size historic slips all around the base of the Mauao – these are nothing unusual.
>
> Remedial options – Slips 3,4, and 5.[81]

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77 Infrastructure Development Code (commonly referred to as slope hazard maps)

78 Doc 73251. This report was prepared to provide *an updated assessment of slope instability in the Mount Maunganui and Papamoa areas, building on previous studies to enhance natural hazard mapping and strengthen risk management strategies for Tauranga City Council*

79 At paragraph 3.2.1.

80 Doc 177340.

81 These slip numbers correlate to the numbers Tonkin & Taylor allocated the slips they identified as having occurred as a result of the 29 January 2011 rainfall event. These particular slips are located well along the Base Track from Pilot Bay on the western side of Mauao.

General Philosophy.

- Ongoing regression of recent (and historic) slips during prolonged and/or intense rainfall events is inevitable
- Major engineering works required to prevent this - very expensive and major impact on Mauao environment
- Historic equivalent slips which did not reactivate during recent storms are equally likely to fail in the future
- Main focus is to keep Mauao accessible and safe to visitors
- Major slips only likely to occur during/following large rainfall events – temporary track closure /Mauao closure may be considered during such events?

Avalon's Monitoring Report – December 2013

[145] Avalon's *Mauao Slopes Monitoring Report for December 2013* (addressed to TCC's then [redacted]), referred to the area above the campground on the harbour side and said:[82]

> A thorough walk through this area found no signs of recent instability but was a reminder of how steep these particular slopes are and the fact that they appear to be the scarp of a historic landslip which, **if reactivated, could result in a significant debris flow into that area of the campground.** (emphasis added)

The Bay of Plenty Regional Hazards Assessment - 2014

[146] The Bay of Plenty Regional Hazards Assessment compiled and prepared by the Bay of Plenty Civil Defence Emergency Management Group in 2014, comprised natural hazard assessments and information provided by the District Councils as well as the Police, Fire and Emergency Services, the District Health Boards and other organisations operating in the region. Hazard assessments were made covering: flooding; coastal erosion; volcanic eruption events, earthquakes, severe thunderstorms; and several other natural hazards including *Slope Instability* (*Landslide, Debris flow, Slumping*). A section of the document contains TCC's own

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82 Avalon, *Mauao slopes Monitoring Report for December 2013* (dated 20 January 2014). Doc 34074.

assessment of slope instability hazard in its area and the likelihood and consequences of the occurrence of a slope instability hazard event occurring.[83]

13.2.1 Hazard Description

Tauranga City is a landform that has been formed by [sic] in part by erosional processes and their interaction on groundwater levels, slope geometry and soil profiles and properties.

Interactions between elements within the system primarily manifest themselves in land slippage. The extent and size of any land slippage is directly attributable to the landform shape, soil profile, the extent and manner that development has occurred and the distribution, intensity and length of rainfall event. In some case land slippage is also triggered by harbour erosion processes that remove toe support from the slope causing the upper layers to slip.

The soils within Tauranga City, along with many other parts of the region, are known to be highly complex and very sensitive meaning that prediction of when land slippage will occur and its failure mechanisms requires the skills of a very competent and experienced geo-professional.

Awareness of the risk of the issues and mechanisms associated with land slippage in the City has been reported on for over 4 decades.

Research undertaken by Tauranga City Council over many years has confirmed the areas that are most susceptible to land slippage. These areas have been mapped and published on our GIS systems and form part of business process when considering infrastructure development, LIMS, PIMS and building and resource consents.

The recognised as most susceptible to slippage are the zones known as 2:1 and 4:1 zones.

The 2:1 zone (up slope Failure) maps the area of land that is steeper than 26 degrees in slope starting at the toe of the slope and ending at the top of the slope. The 4:1 zone (down slope failure) maps the area of land below a slope that is steeper than 2:1 that if it fails the slip debris would travel within.

The City experiences slips of some form most years. Our most notable periods of extensive slippage are as follows:

1979, 1984, 1995, 2000, 2001, 2005, 2011 and 2012.

13.2.2 Likelihood and Consequence Statements

Maximum Credible Event

As such TCC has never modelled a maximum credible event. TCC have simply taken advice on the likely slope failure mechanics and linked that to development patterns, slope geometry

[83] *Bay of Plenty Regional Hazards Assessment* (2014) paragraph 13.2.1, pages 38 and 39.

and rainfall intensities, distribution and volumes to understand when a slope is at elevated risk of failure.

If a maximum credible event was required then modelling the rainfall intensities and distribution for the May 2005 event would be a good start point

Current work being undertaken by TCC is to analyse the rainfall intensities and distribution patterns preceding and on the day when known slip and flood events occurred. This will provide an understanding of vulnerability that can be used in long term and emergency management planning.

The worse [sic] slippage that has occurred in recent times is the 2005 extreme rainfall event when over 300 slips were recorded resulting in the loss of 42 homes. 2011 saw over 40 slips occur, most notable were the multiple slips that occurred on Mauao. No houses were threatened or lost.

Through its statutory processes TCC continues to update its knowledge of slippage and slumping and ensuring those documents obtained are available for public and organisational use.

Avalon's Mauao Slopes Monitoring Report - November 2015

[147] Avalon's monitoring report for November 2015[84] noted that in addition to locating a number of surface boulders on the slope above the campground adjacent to the harbourside amenities block (described as being potential hazards), it had also identified two old landslips. In this report Mr McHugh again included a marked aerial photograph of the lower slopes of the mountain clearly locating the old landslips immediately above the campground. The narration beneath the photograph reads: *Photograph #3. Scarps of old landslips*. This is the same photograph (reorientated) as had previously appeared in Avalon's 2 August 2005 and 17 July 2006 reports and has been set out earlier in this report.

[148] As Staff Member AL had only recently taken up the position as the SM AL SM AL in order to brief him on Mauao and the accumulated Avalon information gathered over some 15 years, Mr McHugh attached to this November 2015 report, a copy of Avalon's July 2005 report (dated 10 August 2005),[85] thereby enabling SM AL

84 Avalon, *Mauao Slopes; Monitoring Report for November 2015*, (8 December 2015) Doc 42200 Addressed to Staff Member AL

85 Avalon Report No 0534 A (Issue 2) Note: Avalon issued two reports having the same title viz: *Mauao Slopes 2005; Zone 6, Southern campground and hot pools, Rockfall hazard & risk assessment*. Report 0534A (28.07.2005), and *Mauao Slopes 2005; Zone 6 Southern campground and hot pools, Rockfall hazard & risk assessment*. Report 0534A (Issue 2) (10.08.2005)

Staff Member AL to review both reports together. As I have noted above, the July 2005 report, resent to TCC in November 2015, included the aerial photograph showing and marking the historical mass slips located immediately above the campground and Harbour Amenities block, and restated the advice given to TCC a decade earlier:[86]

> Photograph 6 indicates historical circular mass slips in the colluvial slopes immediately above the campground (others are also present). These events appear likely to have been over five times larger than the 18 May 2005 slip on the southwestern slopes **and probably released a fast liquified debris flow.**
>
> Should such an event now occur above the campground the consequences **could be extremely serious.**
>
> In some locations the toe of the colluvial slope has been excavated to create level [camp] sites. Such excavations reduce stability.
>
> A preliminary investigation of the potential risks from mass slips is currently being undertaken and will be reported on in due course.
>
> Further site investigation is very likely to be justified and could include geophysics such as a resistivity survey in an attempt to determine colluvial thicknesses and location of water courses and springs.
>
> Other investigation techniques applicable could include installation of piezometers to monitor groundwater and detailed engineering geological logging of exposed sections through the colluvium.
>
> In addition to defining the geology, estimating frequency of slip events will be critical. Identification and dating of ash shower beds or dating organic material within the colluvium could be of some value in this.
>
> (emphasis added)

[149] Avalon's November 2015 monitoring report (dated 8 December 2015), included a photograph of caravans/campervans parked and pushed right up against the cut slope of the mountain, only a short distance away from the Harbour Amenities block.

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86 Avalon Report No 0534 A (Issue 2) at pages 7 – 8. Doc 33540.

The first InSitu Heritage Ltd report – May 2016

[150] In May 2016 for the purposes of making an application to Heritage New Zealand Pouhere Taonga (HNZPT)[87] for approval to carry out maintenance and vegetation clearance work on Mauao, TCC engaged InSitu Heritage Ltd (InSitu) to prepare a report that was requested by HNZPT containing site and heritage management specifications detailing how the work would be carried out. The report noted:[88]

> *Large Tree Removal*
>
> The southern portion of the Reserve contains several very large exotic trees, including radiata pines, which are nearing the end of their life and becoming unstable. In some cases, these trees overhang walking tracks and pose a significant hazard to visitors due to their instability. In all cases, these trees are either growing on archaeological features, or access to them is via archaeological features.
>
> The removal of such trees requires specialist equipment and machinery assistance. Leaving the trees in place is not a viable option due to the public safety risk and if they topple the root plate uplift as well as the damage caused by the main stem and branches impacting the ground surface, is likely to cause significant loss of archaeological features.

Heavy rainfall and drop-out landslide - April 2017

[151] On 5 April 2017 following a period of several days during which Mauao received approximately 250 mm of rainfall, a large drop-out landslide occurred damaging and closing the Base Track. It was approximately 14 metres wide and 10 metres high.[89] The Base Track was initially reinstated by means of a temporary bypass of the damaged section, and subsequently after TCC had commissioned a succession of geotechnical reports by different geotechnical firms and considered several alternative options, by the construction of a new section of track. The remediated

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87 HNZPT was established by the Heritage New Zealand Pouhere Taonga Act 2014. The purpose of the Heritage New Zealand Pouhere Taonga Act 2014 is to promote the identification, protection, preservation, and conservation of the historical and cultural heritage of New Zealand.

88 InSitu Heritage, *Management Specifications for Mauao Historic Reserve, Tauranga* (20 May 2016) paragraph 4.1 page 14.

89 Avalon Monitoring Report, April 2017. Tonkin & Taylor *Mauao Base Track Repair Options Assessment.*

section of the Base Track was designed and its construction monitored by WSP.[90] The work was completed in mid-2020.

[152] In its design report dated 18 December 2019 for the new section of track, WSP noted:[91]

> The landslip occurred on 5 April 2017 following several days of sustained heavy rainfall during the passing of ex-tropical cyclone Debbie. TCC staff observed many groundwater springs at track level leading up to the event. Prior to the slip, a large tension crack had opened in the track before rain was experienced on April 5 which triggered the landslip. Several Pohutukawa trees and a large amount of slip debris slid onto the foreshore creating a debris mound up to 1.3m high at the toe.
>
> Based on these observations, we believe that the slip was likely caused by a build-up of pore water pressure in the slope along permeable sand and silt layers combined with water pressure build up along the tension crack and increased weight of the slope due to the infiltration of rainfall. The large Pohutukawa trees may also have contributed by penetrating the topsoil and colluvium layers on the slope face creating a high-density root mass on the edge of the slope which could reduce the permeability and increase pore water pressures at the face.
>
> ……
>
> Following issue of the options assessment report and subsequent consultation with TCC, Mauao trustees, Regional Council and Heritage New Zealand, the agreed option was to widen the existing track, in combination with the installation of soil nails to improve the overall stability of the slope. Geotechnical investigations consisting of 5 hand augered boreholes and topographical surveys were undertaken in support of the preferred option.

Tree removal from slope above campground - 2019

[153] An issue raised in the Review is whether the removal of a stand of large trees from the slopes above the campground in 2019 contributed to the slope instability that culminated in the 22 January 2026 landslide.

[154] The geotechnical significance and implications of removing well established trees from slopes is an issue on which I sought independent expert advice from ENGEO. ENGEO stated:[92]

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90 WSP *Mauao Base Track Reinstatement – Geotechnical Completion Report* (24 June 2020). Doc 32768.

91 WSP *Mauao Base Track Reinstatement* (18 December 2019), page 1.

92 ENGEO, *Geo-technical Review, Mt Maunganui Landslide* (29 July 2026) at paragraph 4.1.1 – 4.1.2. The full ENGEO report is set out in appendix 3.

> In general terms, vegetation, particularly low height tree cover, can improve slope stability in the near surface materials by reinforcing the soil with root systems, which increase shear strength. Vegetation also reduces pore water pressures through interception and evapotranspiration, thereby lowering the likelihood of soil saturation, and therefore slope failure, during rainfall events.
>
> A 'Window of Instability' exists, somewhere roughly between three to ten years after vegetation removal, in which the highest landslide rates are frequently observed. During this window, the old roots have largely rotted, which allows additional water to percolate into the soil, and any new vegetation's roots are not yet extensive enough to provide strength.
>
> …….
>
> The timeframe between the 2019 clearance and present day is uncomfortably within the window of instability referred to above. Whilst this is unlikely to be proof of causation, the area of vegetation has clearly been removed near the head of the 22 January landslide and in areas that had previously been identified as historic landslides. However, the areas where vegetation has been removed are relatively small and are not entirely above the area of initiation of the fatal landslide. Clearance also occurred to the southwest of the headscarp of the 22 January landslide (Figure A1.9 of Appendix 1) and this part of the slope did not fail. Additionally, the depth of the 22 January landslide is well below the penetration depth of root systems of even tall trees. It is therefore unlikely in our opinion that vegetation removal would have greatly affected slope stability compared to the extreme nature of the rainfall event that occurred in the days prior to 22 January 2026.

[155] As shown in the sequence of eleven photographs in the ENGEO report (Figures A1.1 – A1.11), during the 18 year period between 2007 and 2025 a number of large trees growing on the slope of Mauao almost directly above the Harbour Amenities block were cut down and removed. This is clearly illustrated by comparing the trees in Figure A1.11 (2007), Figure A1.9 (2018 - 2019), and Figure A1.8 (December 2020). While there has since been re-planting in the area where these large trees were once growing, the ground coverage as at January 2026 comprised mainly grass and small shrubs.

[156] In its report ENGEO, referring to these photographs, note that there are no significant changes in vegetation in the images covering the period 2007 to 2015, nor in the images covering the subsequent period, July 2021 to March 2025.

[157] Mauao is classified as an Historic Reserve under the Reserves Act 1977. Section 18 of the Reserves Act provides that it shall be administered that:

> (c) where scenic, archaeological, geological, biological, or other scientific features, or indigenous flora or fauna, or wildlife are present on the reserve, those features or that flora or fauna or wildlife shall be managed and protected to the extent compatible with the principal

or primary purpose of the reserve:

……

(e) except where the Minister otherwise determines, the indigenous flora and fauna and natural environment shall as far as possible be preserved:

[158] The 2017 Mauao Historic Reserve Management Plan established and administered by Nga Poutiriao o Mauao (the Joint Administration Board), includes among its management statements a list of *Actions* which includes:[93]

> Trees planted on archaeological features and the large trees well established on archaeological features should continue to be removed to prevent further loss of archaeological information.

[159] Objective 2 of the Plan states:[94]

> Mauao is an iconic landscape in Tauranga Moana and it contains high ecological values. Consultation with the community highlighted the importance that the community places on keeping Mauao as natural as possible, and on enhancing the native vegetation and protecting wildlife.
>
> This objective aims to restore and protect the health and wellbeing of Mauao for future generations. There are opportunities to restore the korowai o Mauao (cloak) through conservation programmes and planting projects. The cloak of Mauao is a metaphor for the chiefly rangatira status of the maunga.
>
> However, vegetation, particularly large trees, can damage both surface and sub-surface archaeological features, destroying site information by root action as trees grow. The low, dense grassland that covers most of the archaeological features on the southern and western slopes of Mauao provides ideal protection for surface and subsurface archaeological features (Wildland Consultants, 2016). There is a need to find a balance between native re-vegetation programmes and preserving subsurface archaeology, and also between provision of open space, native vegetation and a high-quality track network.

[160] And in a section of the Plan dealing with *Vegetation* it provides:[95]

> (f) The removal of exotic planted and wilding trees will be progressively implemented.

[161] The major vegetation fire on Mauao in 2003 destroyed the trees and foliage over an extensive area of the upper slopes.[96] In the years that followed, a number of exotic trees were progressively removed under the Plan (for archaeological and

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93 Page 31, paragraph 8. Doc 58455.
94 Page 32, paragraph 5.2 Objective 2. Doc 58455
95 Page 35, paragraph 5.2.1. Doc 58455
96 The fire occurred in January 2003 and destroyed 16 hectares of vegetation.

cultural reasons, and with the endorsement of the Mauao Trust Board) while native vegetation regenerated and was re-planted. Aerial photographs indicate that a number of trees on the slopes above the Harbour Amenities block, present in 2017, had been removed by late 2019. It appears that the removal of these trees occurred in stages over a number of years rather than as a single event.

[162] Among the TCC documents I have seen is an operational report for the Mauao Joint Administration Board for April 2019, which was prepared by Staff Member AL Staff Member AL As well as Staff Member AL as the author, the report was signed by Staff Member AM and as Authorisers, Staff Member AN Staff Member AO and Staff Member AP Staff Member AP Under the heading: *Recent Successes*, the report notes that:[97]

> Three large pine trees and a small macrocarpa were removed from the southern side of Mauao this period. These trees were removed as per the conservation management plan for Mauao to prevent damage to archaeology, ensure visitor safety and to allow for planned revegetation planting work to be undertaken without the risk of future damage.

[163] The plan to remove these trees had commenced in November 2018 when SM AM SM AM sent an email to Staff Member AO Staff Member AP and Staff Member AL advising that having checked the Reserves Act Delegations Manual, Ministerial consent was required to cut or destroy a tree or vegetation, and the power to grant the required consent had been sub-delegated to Staff Member AR Staff Member AR . Staff Member AM wrote:[98]

> Just checked the Reserves Act delegations, and the Delegations Manual, and this is my understanding of the requirements for cutting/destroying vegetation and trees on Mauao: Ministerial consent is required to cut or destroy a tree or vegetation, and this power has been sub-delegated to Staff Member AR
>
> The Ministerial power hasn't been delegated further to any of the rest of the Parks and Rec Team.
>
> The consent must be in writing, and is subject to terms and conditions that SM AR may determine.

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97 Doc 261057.
98 Doc 261057.

[164] On 13 February 2019, Staff Member AL received a quote from Full Circle Arboriculture Ltd to remove two pine trees and one macrocarpa tree. Staff Member AL responded saying he would get back to them. The trees referred to in the Full Circle quote appear to be those Staff Member AL referred to in the April 2019 operational report to the Joint Administration Board.

[165] On 30 August 2019, Full Circle Arboriculture sent Staff Member AL an invoice addressed to TCC for "Mount campground, vegetation removal and planting of 600 units" which was done between 31 July and 15 August at a cost of $6,865.00 (*as quoted*), and for an additional $1,350.00 for "pine tree removal, campground" and the use of a chipper for work done on 16 August 2019. As Staff Member AL had obtained the quote from Arboriculture for the work described as relating to the campground, it would appear that the work was in fact undertaken on Mauao, which was SM AL Staff Member AL area of responsibility. Staff Member AL subsequently arranged with Staff Member Q for the campground to pay half of the "campground" cost.

[166] In August 2019 Staff Member AL sent an email to Staff Member AQ Staff Member AQ seeking delegated Ministerial approval to fell and remove some further trees on Mauao. While these trees were located well away from the slope above the campground, the process followed by Staff Member AL and TCC in relation to obtaining approval to remove these trees, is nevertheless in my view, relevant to the process they followed in relation to the trees above the campground. In an email dated 23 August 2019, Staff Member AL said: [99]

> Hi SM AQ I am seeking delegated Minister of Conservation Approval from you for the removal of Exotic Pines, Macrocarpa, and a Poplar around the four wheel drive track entrance on Mauao Historic reserve as shown in the attached image. See SM AM e-mail below for clarity on the delegation requirement.
>
> Why are they being removed?
>
> 1. These large trees are in poor condition and are failing. They are located in and around significant heritage features and if left, they have the potential to do permanent irreversible damage to the ground features around them.

[99] Email 23 August 2019. Staff Member AL to Staff Member AQ Re: Delegation to remove vegetation from Mauao Historic Reserve under Reserves Act. Doc 261057.

2. The location of these trees is within two tree lengths of the four wheel drive track and there is potential that if and when they fail they could endanger someone on the track.

3. This work is consistent with the Mauao Historic Reserve Management Plan section 5.2.2 Vegetation item (f) states; "The removal of exotic planted and wilding trees will be progressively implemented"

4. This action is consistent with the Conservation Plan for Mauao Historic Reserve.

5. Some native revegetation planting will occur in this location following the removals to contribute directly to restoring the Korowai of Mauao objective.

6. This work is covered specifically under our existing Heritage Authority with HNZ and we have a clear specification for the works to minimise the impact on heritage values.

The work will be competitively tendered to ensure we get the best possible methodology and price.

This is a significant piece of work and will require some short term track closure and diversions for Health and Safety. A community coms will be required to ensure the community are well informed.

Happy to discuss further if you have any queries.

Thanks

Staff Member AL

[167] As this email shows, the process of seeking approval for removal of trees on Mauao was being carried out in accordance with the Mauao Historic Reserve Management Plan and Policy for the removal of exotic trees. While it appears that the requisite consent to do so under the Reserves Act was being obtained, nowhere in this email correspondence is there any reference to obtaining a report regarding the geotechnical implications of removing large trees from the slopes of the mountain. Where, as was the case here, it was proposed to remove trees located on a slope above the campground, it would have been prudent to obtain a geotechnical report as to the effect of removal of the trees on the stability of the slope above the campground. So far as I have been able to determine no geotechnical report was ever obtained pertaining to the removal of the trees.

[168] There are important and deeply significant cultural considerations informing the Mauao Management Plan and Policy. Such considerations must, however, always yield when they conflict with the interests of public safety. As ENGEO have said, it is not possible to attribute the occurrence of the landslide of 22 January with the felling

and removal of the large exotic trees from the slope above the campground, but it is nevertheless troubling to note that removal of the trees in 2019 preceded the January 2026 landslide by 6 years 5 months, placing it "uncomfortably within the window of instability" described in the ENGEO report.

[169] TCC must ensure that any work planned to be undertaken on Mauao which has the potential to affect public safety is made the subject of appropriate geotechnical examination and reporting. Irrespective of whether or not the removal of the trees above the campground was a factor that contributed to the occurrence of the fatal landslide, in my view the removal of the trees from the slope above the campground should not have been approved or undertaken without a geotechnical report as to the implications on slope stability. I have made a recommendation to that effect.

Water reticulation on the slope above the campground

[170] The blue polyethylene pipe which was exposed when the slip behind the Maclennan's campervan was struck is part of a water reticulation system which supplies two water hydrants located on the eastern flank of the mountain which are used as the water source for helicopter-based firefighting operations.

[171] A 180 mm polyethylene fire main, supplying the Mauao helipad hydrants, runs from the Pilot Bay area, crosses the campground, and rises directly up the slope in the vicinity of the area that failed on 22 January 2026. It is connected to two trunk mains from the Mount Reservoir: a 450 mm operational main, and an older 250 mm asbestos-cement main understood to be redundant and isolated. However the fire main itself has no flow or pressure monitoring of its own.

[172] The fire main was designed in 2004 and trenched up and across the slope to the water hydrants in late 2005. That work was therefore carried out after Dr Richards had warned, in 1999, that the siting of accommodation beneath these slopes was imprudent and that no works should proceed without consideration of slope stability, and also after the extreme rainfall of May 2005 and Avalon's reporting on the slips it caused, but some seven months before Avalon's report of 17 July 2006 which had strongly recommended that "absolutely no earthworks or drainage works be carried

out in or above the campground without serious consideration of the potential consequences." While the installation pre-dated Avalon's 2006 recommendation by some seven months, the concern that disturbance of this colluvial slope could contribute to slope instability and landslide risk was already known to TCC when the pipe was designed, tendered and installed.[100]

[173] So far as I have been able to determine, no geotechnical report or slope-stability assessment was obtained as to the effect of trenching the fire main up and across the slope above the campground. This is the same omission I have identified in relation to the 2019 tree removal: a physical intervention on the slope above an occupied campground, carried out without the geotechnical assessment that the repeated professional advice of Dr Richards (1999) and Avalon (2006) called for. From 2006 onward, Avalon's recommendation was on its face a standing constraint on any later maintenance or modification of the pipework on the slope, and I have seen no evidence that the recommended "serious consideration" was ever undertaken regarding the slope stability implications of the trenching work before that work was done.

[174] As regards 22 January 2026, I have had the benefit of an analysis of the water-network SCADA flow data by Staff Member AS at TCC. His key points, which I record without resolving the technical questions they raise, are these:

> • The 450 mm operational main behaved normally throughout the period before the failure, with no abnormal trend or instability, and responded with an increase in demand at the moment the fire main failed at about 9:30 am; Staff Member AS concludes it was the primary supply path to the fire main at that time, and that there was no positive evidence, at trunk-main level, of a significant pre-existing leak on the fire main, while expressly cautioning that a smaller leak, or one developing rapidly at or just before failure, might not be detectable in the data.[101]

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100 In Dr Richards' 1999 report and in Avalon's 2005 flood damage report.

101 Staff Member AS further reports: That in the course of a meter investigation conducted in June 2026, a configuration error was identified on the 450 mm main (configured as 350 mm instead of the installed 300 mm). Application of the appropriate correction factor to this meter is critical to the correct interpretation of the data. Once corrected, the 450 mm main demonstrates a consistent and physically valid relationship with the reservoir storage across both the detailed event period and

• The 250 mm “redundant” main, which had recorded effectively no flow beforehand, carried a sustained and unexplained flow from about 21 January totalling approximately 299 cubic metres up to 9:30 am on 22 January (about half the net volume passing down the operational main over the same time window). At the moment of failure it showed no corresponding change, from which Staff Member AS concludes it was unlikely to have been a significant supply pathway to the failure; but he records that the flow confirms some hydraulic connectivity existed, that the main's intended isolation may not have been fully effective, that a limited interaction with the fire main or surrounding network cannot be entirely excluded, and that the cause of the anomaly is not yet understood.

• Neither main showed any precursor signature of an impending failure in the period beforehand.

[175] The cause of the landslide, including whether water from the reticulation entered the slope or contributed in any way to its failure, is a geotechnical and forensic question on which I make no finding; it is beyond what the SCADA data can resolve and lies beyond the boundary of my Terms of Reference. However what can be said within the scope of this Review is the more limited point: that, as with the tree removal, on the basis of the information available to me it appears that extensive pipe trenching

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the wider dataset. Over the period 20 January to 5 February 2026 the corrected 450 mm flows and reservoir level close to within 0.4%, which is within normal measurement uncertainty. The 450 mm main also responds appropriately to the water main break on 22 January, with increased outflow matching the timing and magnitude of the observed reservoir drawdown.

In contrast, the 250 mm main does not demonstrate a consistent relationship with reservoir storage. During the key period on 21 January, the 250 mm main indicates substantial outflows that are not reflected in corresponding changes in reservoir level. There are also periods where the 250 mm main shows ongoing flow while the reservoir level remains stable, and transient spikes that do not produce any observable storage response. These behaviours are not physically consistent with real flow affecting the reservoir. When both mains are included in the water balance, a significant and persistent imbalance appears beginning on 21 January. However, this imbalance is resolved when the analysis is restricted to the corrected 450 mm main. This indicates that the apparent discrepancy is not due to a real loss or gain of water within the system, but arises from differences in how the two mains are represented in the data.

Overall, the analysis shows that the reservoir system behaved hydraulically as expected throughout the storm event and the subsequent main break. The corrected 450 mm main, in conjunction with reservoir level, provides a complete and reliable representation of system behaviour. The apparent imbalance observed in the raw data is attributable to potential inconsistencies in the 250 mm signal rather than any real hydraulic issue within the network.

works were carried out on the slope above an occupied campground without the geotechnical assessment addressing the known landslide hazard that repeated professional advice had recommended.

Tonkin & Taylor – City Wide Natural Hazards Risk Assessment - 2020

[176] In January 2020, Tonkin & Taylor provided a high-level city-wide natural hazard risk assessment for the whole of Tauranga to TCC.[102] The intent of the work and purpose of the report was to create a baseline of natural hazard risk which could be used to inform future city planning, using the best currently available data. The natural hazards assessed and covered by the report included *slope instability.* While the report referred to Mauao in the context of describing the natural hazard of liquefaction, [103] it did not specifically refer to the mountain in the context of addressing the issue of slope stability, and Mauao is not shown as being within the slope instability Hazard Susceptibility Area depicted in the map attached to the report.[104] The report said:[105]

> 2.7 **Slope Instability**
>
> Slope instability occurs where either soil and/or rock move downslope under gravity. Typically, slope instability occurs on relatively steep slopes in response to an external trigger such as heavy rainfall or earthquake shaking. Slope instability typically causes damage to the built environment in the form of either "evacuation" of the land underling structures or "inundation" of structures with the debris generated.
>
> Following a series of rainfall induced landslide events that caused significant property damage in the 1980s and 1990s, a number of studies were undertaken to better understand the factors that influence slope instability in the Tauranga region…….. The findings of these studies indicate that the evacuation zone of the landslip typically occurs above a line projected at approximately 1V:2H from the toe of a slope and the run-out distance of the landslip debris typically falls within a line projected at about 1V:4H from the headscarp of the slip (Richards, 2001).

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102 Tonkin & Taylor, *Tauranga City-wide Natural Hazards Risk Assessment*. An updated version of the report was provided by Tonkin & Taylor to TCC in April 2020. The amended report was updated data relating to coastal erosion and liquefaction.

103 See para 2.6 page 13

104 See Figure B15- *Slope Instability HSA.*

105 Tonkin & Taylor – *Tauranga City-Wide Natural Hazards Risk Assessment* (January 2020) at page 14.

To understand which parts of Tauranga may be susceptible to slope instability, these conditions have [been] mapped across Tauranga using geospatial tools. An additional projection line of 1V:3H from the toe of the slope was also mapped as part of this process.

Avalon Monitoring Report – August 2020

[177] Avalon's *Mauao Slopes; Monitoring Report for August 2020* was Avalon's first report following Staff Member E taking over from the previous Staff Member AL Staff Member AL. As Staff Member E was new to the role, when Mr McHugh was in Tauranga on 6 August 2020 to undertake a monitoring walkover of the mountain, he supplied SM E with a printed set comprising six previous Avalon reports covering the 2003 – 2006 period together with copies of correspondence in which Avalon had reported to TCC in response to rockfall events and its biannual slope monitoring. In Avalon's 7 August 2020 report to TCC, Mr McHugh noted:

> Dear Staff Member E
>
> Mauao Slopes; Monitoring Report for August 2020
>
> The six monthly rock bluff survey benchmark monitoring and site geotechnical walkover was due in April 2020. Due to the coronavirus pandemic the work could not be carried out until the 6th August.
>
> TCC's staff member Staff Member E Staff Member E
>
> SM E and Neil McHugh, Avalon's Engineering Geologist, met on 6th August and reviewed the history of rockfall monitoring work and reports on Mauao.
>
> Detailed investigation of Mauao's slope hazards was first prompted following widespread fire damage in January 2003. Avalon's investigations have included rockfall and slip hazard and risk assessments in response to fires, earthquakes, floods, rockfalls and human activities. All these events, investigations and responses were documented and reported to TDC. This has allowed Avalon to build up an understanding of the rockfall processes and risks on Mauao.
>
> 2003 Report on Mauao Rock Slopes and Rockfall Hazards
>
> 2004 Report on Mauao Rockfall Hazards Risk Assessment & Management
>
> 2004 Report on Mauao Slopes Earthquake Damage & Revised Risk Assessment
>
> 2005 Report on Mauao Slopes Zone 6 Rockfall Hazard & Risk Assessment

2005 Report on Flood Damage & Slope Remedial Works

2006 Report on Rockfall & Landslide Risk Review

2003 to 2020 Letter reports in response to rockfall events

2003 to 2020 Letter reports on biannual routine slope monitoring.

……..

Avalon Monitoring Report – August 2021

[178] In its August 2021 Monitoring Report Avalon referred to a sinkhole in the lower slope above the campground which had been found during a previous monitoring walkover the area in March 2021. The report said:

> **Sinkhole on the lower slope, above the campground**
>
> This was found on our previous monitoring walkover and reported to the ranger's office or campground since our previous monitoring.
>
> The springs that issue around the lower colluvial slopes around Mauao indicate widespread underground water flow. Underground drainage routes will tend to form at levels where sandy, relatively permeable colluvium, overlies impermeable clay (weathered volcanic ash) layers. The 'piping' effect, scouring out sand, can create open 'pipes', 'small tunnels'.
>
> This feature looks likely to be a 1 m^3 or so void collapse above a small underground watercourse in a natural 'pipe', scoured out by flowing water.
>
> On this inspection we probed the 'tunnel' with a borehole camera and light source on extendable fibreglass poles.

WSP Report - Mauao Base Track - 16 November 2022-

[179] In late 2022 WSP was engaged by TCC to undertake a high-level risk assessment of the slope stability hazards of the Mauao Base Track. The purpose of the assessment was to identify the slope stability hazards affecting the track and to determine risk ratings to assess the level of risk posed to the track from slope stability issues which include underslips and overslips. In this report WSP once again

rehearsed the history of landslides on Mauao and referred to the large 5 April 2017 landslip which damaged a significant section of the base track:[106]

> There has been a history of stability problems on Mauao particularly those associated with the steep colluvial slopes which drape over the underlying volcanic rock and particularly, cuts into this soil, usually associated with high rainfall events. There has also been extensive rockfalls associated with the steep bluffs below the summit.
>
> Most recently, a significant 14 m wide landslide occurred on the base track approximately 620m south west from the Pilot Bay carpark following several days of sustained rainfall in April 2017 during the passing of ex-tropical cyclone Debbie. The landslide resulted in the closure of the base track through this section with temporary access via a set of stairs around the slip until the track was repaired and re-opened in March 2020. …….
>
> The lower slopes of Mauao are comprised of colluvium and are studded with landslip scarps. Boulders are commonly embedded into the colluvium and ashes. As recorded in Martin & Brideau (2014), debris flows are likely to reactivate during heavy rainfall within these landslide scarps.

[180] WSP referred to Dr Richards' 1999 Mauao Stability Assessment report, repeated that report's key conclusions, and reproduced an aerial photograph of Mauao (extracted from the 2014 Brideau & Martin Report) which identified the locations of mass movements (landslides) on Mauao occurring during the 1943-2011 period, and identified the presence of large scarps above the campground adjacent to the Harbour Amenities block. Referring to Dr Richards' 1999 report, the WSP report said:

> Dr Laurie Richards presented a study on the stability of the slopes of Mauao. The report considers the stability of the slopes and the risks they pose to the public using the track network. The report included a summary of the geology and geomorphology, identification of different failure mechanisms, including stability analysis of rock cliffs, and risk a analysis, to both the public using the track networks and the camping ground and hot pools on the eastern flanks of Mauao. The key conclusions of this report included:
>
> - The frequency of rockfalls from the summit cliffs was low at the time the report was prepared with no rockfall incidents to date.
> - With the noted frequency of rockfall, the risk of accidents to users of Mauao was considered to be at an acceptable level.
> - There are a number of failures in the frontal lobes of the landslides along the Base Track which indicate that these are prone to failure when over steepened.

[106] WSP, *Tauranga City Council – Mauao Base Track - High Level Qualitative Slope Stability Risk Assessment.* (16 November 2022).

- The slopes are comprised of debris /colluvium and are very sensitive to small changes at the slope toe.

- Over steepened debris fans that outcrop adjacent to the base track are prone to failure.

- Some caravan sites in the campground were situated next to steep slopes – these should be removed due to landslide or rockfall risk.

- During heavy rain, debris flows can reactivate and fail at high speeds.

For further detail please refer to the original report.

WSP Memorandum report – 1 March 2023

[181] In February 2023 the TCC Reserves team engaged WSP to undertake a geotechnical inspection of a number of slips that had occurred on several TCC reserves and to prepare a report as to any immediate risks they presented to the public or to property, and advise whether any emergency works were required to mitigate risks. One of the sites WSP was asked to report on was a slip that had occurred in the Mauao campground where a tension crack had been found to have developed along the crest of a slope behind the cabins on sites H72 and H73. These two cabins are situated at the far end of the campground driveway on which the Harbour Amenities block is located, and adjacent to the foot of the slope. Having described the tension crack and its location, WSP said:[107]

Failure Mechanism

Based on our site inspection, it appears that there is an overland flow path which ponds above the site. This, along with saturation of the slope from rapid and persistent rainfall over the slope would have likely resulted in an elevated groundwater table resulting in increased pore pressure in the slope and reduction of shear strength of the soil. As a tension crack has developed, there has been some shear displacement, however the slope has not completely failed. …….

Slope Risk Assessment

We consider the slope to be currently stable under dry weather conditions, however the failure may be re-activated during a high rainfall event. (e.g. 100-year storm event) if excess water

[107] WSP Memorandum (1 March 2023) *TCC Slip Inspections for Council Reserves.* Doc 35310. Note: In fact this slope did fail after heavy rain fell on 10-11 June 2025.

pressure develops in the slope. The consequence of failure would be moderate for structures situated immediately. However, as the slope is of limited height, we anticipate a potential slump failure would be limited to the toe of the slope.

TCC Strategy, Finance and Risk Committee meeting 26 June 2023

[182] On 26 June 2023 TCC's Strategy Finance and Risk Committee met. On the agenda was the *Infrastructure Resilience Programme Update.* The Minutes record that the Committee received a report by a TCC Resilience Specialist: Natural Hazards and Infrastructure, titled: *Infrastructure Resilience Programme Update*, and that it:[108]

> Provides a first cut indication of the resilience component of the Resilience and Sustainability Programme and an outline of how to de-risk and rank the resilience component of Council work resulting in a good picture of the hazards in the city.

[183] The purpose of the report was explained:[109]

> 1. The purpose of the report is to provide an update on the resilience component only of the Resilience and Sustainability Programme, as it is relevant to the Strategy Finance and Risk committee from a risk perspective, and to receive any feedback on resilience investments prior to the Executive's review and prioritisation of the projects for consideration by the Commissioners through the 2024-34 Long Term Plan process.
>
> 2. The Infrastructure Resilience Programme started in 2017 and progressed to overlay detailed hazard maps on high resolution asset maps of roads and three-waters and identified "at risk "assets. Appropriate risk reduction measures and costs were determined, and projects prioritised for inclusion into the 2021-31 LTP.
>
> …..
>
> 7. Infrastructure resilience to natural hazards, and climate change, has become an increasingly important issue as the impacts of extreme weather events and other natural disasters are more frequent. When cities (and regions) are impacted by natural hazards the consequences can be severe, as has been seen in the 2023 Auckland Anniversary Floods during Cyclone Gabrielle.
>
> …..
>
> 9. Council researched, mapped and assessed the natural hazards, that impact the city, to understand areas of risk. The areas of risk were assessed against infrastructure critically and services that support the community (e.g. water pipes, bridges, roads etc.) to identify 'hot spots' of risk exposure.
>
> ….

[108] Page 10 paragraph 9.6. Doc 301277.
[109] Doc 301271 at page 120 paragraph 1 etc.

Data Updates

Landslides

20. A city-wide landscape study has been undertaken to assess and map landslide susceptibility and to update the landslide hazard zones used in the City Plan. An initial GIS analysis indicates that approximately 5,000 properties have been affected by the update in slope hazard maps.

Implications /Risks

43. The risks of not making infrastructure resilient to natural hazards and climate change can be significant and can have negative consequences for individuals, communities, and economies including:

(a) Economic costs: ……

(b) Human costs: Natural disasters can cause injury, loss of life, and displacement of populations. Communities that lack resilient infrastructure may be more vulnerable to these risks, which can have long-lasting physical, emotional and economic impacts.

…….

The TCC Sustainability Team engages Tonkin & Taylor to undertake a natural hazards risk assessment which includes the Holiday Park.

[184] In January 2023, the TCC Sustainability & Waste team engaged Tonkin & Taylor to develop a Corporate Sustainability Plan for the Council. Operational Risk was one of the workstreams. In March 2023, Staff Member AT SM AT organised a *risk identification workshop* to consider climate and natural hazard risks relevant to TCC buildings.

[185] Also in March 2023 the Strategy, Finance & Risk Committee considered an early working draft of the Tauranga Climate Action & Investment Plan. In a memorandum to the committee dated 23 March 2023, Staff Member AU Staff Member AS attached a copy of the draft plan in which it was noted:[110]

Climate change is already affecting Tauranga City. Without urgent action, as our contribution to global efforts, these impacts will get worse over time…..

110 Doc 301269

> In recent years TCC has undertaken a number of initiatives to reduce GHG [greenhouse gas] emissions and understand the effects of climate change. These have included changes to the domestic waste system, accessible streets programme, streetlight LED investment and mapping of natural hazards, including climate change hazards, across Tauranga City.

[186] On 27 March 2023 Staff Member AT sent an email to members of the Property Services, Asset Services, and Risk & Assurance teams advising them of the intention to run a pilot project in collaboration with the Property (Buildings) team to undertake a risk assessment of natural hazards and climate risks to TCC assets and activities, which would involve briefings, and workshops to develop risk ratings for specific physical assets.

[187] Workshop meetings of TCC staff and Tonkin & Taylor representatives were held to identify physical TCC assets at risk from natural hazards and to rate the risks identified. Thereafter Tonkin & Taylor completed its own assessment of the risks and presented the results to enable them to elicit feedback from key stakeholders within TCC, and to frame the next steps. Members of the Corporate Sustainability team, the Risk & Assurance team, the Property Services team, the Asset Services team as well as staff from Tonkin & Taylor, attended.[111] Three meetings were held during March and April 2023. In the course of this process, several buildings located at the Beachside Holiday Park were identified as being at risk from several natural and climate hazards, including coastal inundation, flooding, increased temperatures and extremes, *landslides and soil erosion*. The risk assessment process focussed on six natural hazards: flooding; coastal inundation; coastal erosion; liquefaction; groundwater; and landslides.

[188] At a further meeting on 9 May 2023, Tonkin & Taylor reported the outcome of the meetings back to members of the Corporate Sustainability and Asset Services teams in a PowerPoint presentation document: *Climate Change Physical Risk Assessment (Pilot assessment results)*. Tonkin & Taylor addressed each of the six natural hazards, and identified those TCC buildings which were considered to be at risk. The Holiday Park's Harbour Amenities building and Pilot amenities building at 10 Adams Avenue; the Mount Hot Pools complex; the Holiday Park office; and Ocean

[111] The meetings were held on 11 and 17 April, and 9 May 2023. Those invited included Staff Member AV Staff Member AV. However, although members of his team were invited and attended, Staff Member AV does not recall attending these meetings himself.

amenities building were all identified as being at risk from one or more of the natural hazard risks. The document noted just two buildings susceptible to landslide risk: The Otūmoetai Pool and the Tauranga Memorial Pool.

[189] However in an excel spreadsheet subsequently sent to TCC, Tonkin & Taylor noted that landslides and soil erosion had been identified by the group as a direct climate hazard risk for the Beachside Holiday Park. Under the heading *Risk Description* they wrote:

> Landslips and rockfall can cause sudden damage to Beachside holiday park assets (there was a recent landslip at the park). Significant H&S [health and safety] issue as an incident can impact structures. Staff only aware of the recent event that affected the park (although the base track has been closed a few times over the years). (Landslide RA [risk assessment] has been undertaken for the base walking track) *To be checked with* Staff Member Q *and* SM AP SM AP

[190] Under the heading, *Exposure*, Tonkin & Taylor assessed the present and mid-term (2050) risk as *Moderate,* and the long term (beyond 2050) level of risk as *High* and increasing to become *Very High.* The risk was then assessed by reference to factors termed: *Sensitivity; Adaptive Capacity;* and *Consequence.* The Sensitivity assessment was described as: *High - Highly sensitive (depending on where it is), but in general landslips can cause significant damage.* The Adaptive Capacity assessment was: *Medium - Lower slopes can be stabilised via engineering. Rockfall can be engineered (some has already been undertaken).* The Consequence assessment was: *Significant-High potential for national media coverage and for injury due to people living/staying there.* The Tonkin & Taylor risk assessment process then involved making a further overall assessment which took all three factors into account. Tonkin & Taylor's assessment of the level of risk at the date of their report ("the present"); midterm (2050), and longer term (2100) was *High,* and beyond 2100 assessed as *Critical.*

[191] On 17 May 2023 Staff Member AT sent the Tonkin & Taylor spreadsheet to SM AV Staff Member AV and another member of the Staff Member AY Staff Member AY saying:

> We have now received the updated risk register from the building/property pilot, see attached spreadsheet. Thank you so much for your feedback so far! Staff Member AY – the changes you raised a few weeks ago should be addressed in terms of wording, rating colour etc. Tonkin & Taylor presented the results for both the spatial and non-spatial assessments last week. I'm attaching

> the presentation in PPT recording, Tonkin & Taylor Staff Member is walking through the spreadsheet, methodology and results.
>
> It would be great to have your eyes on the format/output and methodology to ensure that this eventually can be integrated or aligned with our together agreed on next steps.
>
> Looking forward to your feedback! Happy to set up a meeting next week. Just let me know.

[192] Staff Member AT received an email response from the Staff Member AW Staff Member AW dated 19 May 2023, requesting Staff Member AT reduce the level of detail she had proposed for entry into the risk register. Staff Member AW explained:[112]

> The level of detail in the sustainability risk register is not going to translate into CAMMS.[113] This means your risk matrices will not be able to be migrated into CAMMS. All data input into CAMMS needs to be within the boundaries of our TCC risk register template and match TCC's matrices both in language and ratings. Unfortunately it is not possible to have extra drop down boxes specific for sustainability as this will be confusing to other users ….

[193] On 31 May 2023 Staff Member AV sent an email to eight other TCC staff, attaching the "last version of the Risk Register for your group….".[114] He asked them to review the register and revert to him with any changes by 16 June 2023. In a follow-up email on 21 June 2023, Staff Member AV wrote:

> Hi all
>
> Thank you to everyone that provided updates to the risk register – these have now been incorporated. Where new risks have been identified these have been added as drafts, and we'll discuss these in the coming weeks before making them live.
>
> It's now time to provide commentary for the Quarterly Risk Report that will be provided to the Executive, and the Strategy, Finance and Risk Committee. Please provide a brief commentary to demonstrate that you have been managing your risks. Can you also please consider the key themes / trends you are seeing and how these might be changing.
>
> You can view a copy of the last quarterly report on Infocouncil (SFRC 6 June) ……

---

112 These emails were copied to: Staff Member AV Staff Member AX and Staff Member AY

113 CAMMS Riskonnect being the risk management software programme being used by TCC.

114 The recipients of this email included Staff Member AZ and Staff Member BA

[194] A further meeting was held online between Tonkin & Taylor and TCC representatives on 7 June 2023 to discuss the results of the pilot physical risk assessment, and to clarify some matters. The minutes of this meeting record: [115]

> ..Mount holiday park - a risk but it is more about managing H&S issues (due to rockslides).

TCC engages WSP to prepare a natural hazards risk assessment for the Holiday Park

[195] Following a series of discussions over several weeks, TCC formally engaged WSP to prepare a natural hazards risk assessment of the Holiday Park. This was considered to be an appropriate starting point for a first-stage investigation of the identified TCC owned assets. On 29 August 2023 WSP sent Staff Member AT an email attaching an *Offer of Service* pursuant to which it was proposed that WSP could prepare a report for TCC:[116]

> The aim is to look at the possible impact from natural hazards to identified assets in more detail, and also provide useful information to Council on what the results mean and how the assets could be managed to ensure safety and resilience. For example, if there is a flood: where will it impact, what size/frequency event (now & future), water depth, will the buildings foundation be inundated, how many people might be affected (injured, killed), what is the risk to people, property and services, are there any mitigation measures we can put in place now, and in the future. Please feel free to call or email me if you'd like to talk through what is proposed, and I'm more than happy to discuss any changes to the scope to better meet your needs.

[196] In their letter WSP said:[117]

> 1. Introduction and Project Background
>
> WSP would like to present to you an Offer of Service to further understand the Natural Hazard Risk for key Tauranga City Council ("Council") assets.
>
> WSP understand that as part of obtaining sustainable outcomes for our city and community, Council have been working on a Corporate Sustainability Plan, which looks at the organisation and ensuring that sustainability is also applied to everything Council does.
>
> As part of developing the Corporate Sustainability Plan the resilience of Council-owned assets, in the face of a changing climate, needed to be understood. The first step identified the assets at risk from natural hazards, both now and in the future. These included the Mount Maunganui

115 Doc 20230607
116 Email – WSP to Staff Member AT 29 August 2023. Doc 296895
117 Letter/emailed - WSP to Staff Member AT 29 August 2023. Doc 48896

Beachside Holiday Park ("Holiday Park"), the Historic Village, Queen Elizabeth Youth Centre, Omanu and Mount Maunganui Surf Clubs and the Tauranga Art Gallery to name a few.

Now that the assets at risk have been identified there is a question as to what this means to Council, such as where the asset will be impacted, how frequently, depth of any inundation etc. This may also include how the asset could be managed to ensure the future resilience, minimise the risk to both Council and the community, and to enable communities to understand how they may be affected by climate change impacts.

2 Proposed Scope of Works

Initially, WSP propose to undertake a natural hazard risk assessment (NHRA) at the Mount Holiday Park. The Holiday Park is in an area subject to natural hazards such as earthquakes, slope instability, and flooding from extreme rainfall, tsunami, harbour and coastal inundation (new dataset due for release in September). This is a well-used and popular Council asset which has many visitors staying throughout the year; the park is generally fully booked from Boxing Day through to mid-January with occupancy around 85% for the rest of the time. The risks of injury or fatality to sleeping persons in fragile accommodation can be high and owners / operators of such facilities do have a duty of care to ensure their safety.

An overview of the slopes of Mauao was undertaken in 1999 (TCC ref: TL1028a), following a debris flow in 1998, to assess the risk to the hot pool and camping ground complexes, walkway networks and recommend short to long-term strategies. Whilst there was no immediate concern, the report recommended (amongst other things) installing control points, removing caravans from below an unretained cut slope, erecting warning signs, and detailed mapping of slope features that could be checked on a regular basis to monitor slopes for any changes.

WSP undertook a high-level qualitative slope stability risk assessment for the Mauao base track (Ref: 2-9B497, Nov 2022), excluding the slopes above the Holiday Park, with recommendations made to include periodic inspections of the slopes to assist with asset and risk management. Earlier this year, WSP also inspected an area of slope instability above the Holiday Park (Ref: 2-9B559, March 2023) where a 17m long tension crack developed.

Flooding and debris flows, whilst less documented, have occurred at the Holiday Park. We anticipate that these, along with slope instability, may become more frequent with extreme weather events. We also note that a new dataset will be released by Bay of Plenty Regional Council (BoPRC) later this year showing areas at risk from inundation during storms originating from the open coast.

To assess the natural hazard risk, we propose to broadly follow the NHRA methodology (Appendix L) in the operative BOPRC Regional Policy Statement (RPS) Natural Hazards Provisions. The NHRA is a generally qualitative and probabilistic process that compares the consequence level of specific hazard for differing design events considering the following elements:

Health and safety (fatalities and injuries)

The effects to lifeline utilities and services; and

The ongoing functionality of buildings, with varying degrees of emphasis placed on critical or socially /culturally significant buildings.

To accomplish a NHRA for the Mount Holiday Park, the following scope of works will be undertaken:

A desktop study, including but not limited to:

- Available geomorphological and hydrological conditions
- Historic aerial photographs
- A review of the TCC and BOPRC online hazard maps
- Reports and maps pertaining to the hazards on the site
- Technical reports undertaken for the site

A site walkover to make observations of possible hazards and to complete the desktop geomorphological assessment.

Mapping of the areas which may be impacted by natural hazards.

A qualitative risk assessment, completed in accordance with Appendix L, and undertaken using the information available above.

A summary of suggested controls that would help reduce the likely consequential effects of a hazard occurring.

The outputs will include a report detailing our assessment, maps, and a summary of suggested controls/ management options.

……

We anticipate that this methodology and scope of works described above may be applied to other Council assets.

…..

We have assumed that the scope of work can be performed in accordance with the terms and conditions set out in accordance with an ACENZ Short Form Agreement for Professional Services Engagement.

Based on our current availability, we estimate that we could be completed within approximately 4 to 6 weeks following receipt of a signed approval to proceed.

……..

[197] The following day, 30 August 2023, Staff Member AT sent an email to Staff Member AP Staff Member AP .[118] She said:[119]

> Subject: Natural Hazard Risk to Beachside Holiday Park - assessment and management
>
> Kia ora Staff Member AP
>
> As you may know, we performed a high-level climate risk assessment of a number of TCC buildings/properties together with Tonkin & Taylor a few months ago. A couple of assets came out with a high-risk rating based on the exposure to natural hazards, their sensitivity and adaptive capacity. One of these was the Mt Beachside Holiday Park and we were recommended to perform a site-specific assessment to understand where and how the site will be impacted. We have now received an offer of service from WSP to help us better understand what the risks are and what can be done to increase the resilience and safety. I'd like to hear from you what you think and if you would like us to go ahead with this work. It would be managed and paid by the Climate & Sustainability team, with support from your staff to enable site visits and sharing of information. Feel free to set up a meeting with me to chat further!
>
> Ngā mihi,
>
> Staff Member AT

[198] Staff Member AP immediately sent an email to Staff Member Q Staff Member Q [120] He asked: *Are you keen for this?* Staff Member Q was apparently away on leave in early September and there was no immediate reply.

[199] The TCC Council meeting agenda for 4 September 2023 included consideration of a document titled: *Landslide Susceptibility and Slope Hazard Map Data Release* which noted that TCC had engaged WSP to undertake a city-wide landslide study using new data and adopting new standards to assess and map landslide susceptibility and to update the landslide hazard zones and recommended that the Council: *Receives the report "Landslide Susceptibility and Slope Hazard Map Data Release."*

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118 Staff Member AP was appointed to the Staff Member AP role in October 2022 and had direct responsibility for the Holiday Park for a period of approximately two and a half years, until his position was disestablished and he left TCC in May 2025. Staff Member AP portfolio encompassed McLaren Falls park, the Cemetery team, the Environment team, the Arborist team, the Park Assets team, Mauao, and the campground. Staff Member AP describes this as excessive with competing priorities and says that a later restructure recognised this and shifted a portfolio to another group.

119 Doc 296895

120 Email Staff Member AP to Staff Member Q 30 August 2023. Doc 296895

Staff Member AT *tries again*

[200] Having not received a reply to the email she sent Staff Member AP on 30 August 2023, Staff Member AT sent him a follow-up email on 5 September 2023, saying: Staff Member AP *Did you get a chance to look at this? Nga mihi,* SM AT [121]

[201] On 15 September 2023, Staff Member AT prepared a document headed: *DRAFT Summary of results from pilot risk assessment on TCC buildings.* She noted that the buildings considered in the pilot risk assessment included three at the Holiday Park Campground: the Information Centre; the Kitchen Block; and the Amenities Block (all at 10 Adams Avenue). A copy of the Tonkin & Taylor spreadsheet report containing the risk assessments was set out in the summary document, and Staff Member AT commented on the results of the pilot assessment set out in the spreadsheet:

> Through the two workshops with TCC staff, 23 direct and 7 indirect risks were identified and rated. The results are available in this spreadsheet with notes and rationale for rating, which can be updated at any time.
>
> Out of the 30 risks, 9 risks were rated as 'High' or 'Critical' in a 2050 RCP 8.5 scenario.[122] These are listed below.
>
> …
>
> Extreme weather, increased temperature extremes, flooding, and landslides are projected to have high impact on TCC buildings and assets by 2050.
>
> Ranked in order of criticality, some of the conclusions from these outputs are: ….
>
> - Landslips events nearby Beachside Holiday Park has happened at least once in the previous 5 years, and there is a high potential for injuries to people, and potential national media coverage.

[202] Staff Member AT concluded her summary memorandum saying:

> **Recommendations**

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121 Doc 299128.

122 RCP 8.5 represents a scenario where global greenhouse gas concentrations continue to increase at the current or an accelerated rate.

……..

Non-spatial risk assessment

The preliminary results from the non-spatial risk assessment showed that certain assets have critical risks - including EOC buildings, the Historic Village, Beachside Holiday Park, and the dog pound – and these would benefit from additional investigation.

It is recommended that the methodology and process for rating climate risks is embedded into TCC's risk management processes at a corporate, asset, and operational level, and updated regularly by staff. The Climate and Sustainability team can support this work.

Staff Member AT *tries once again*

[203] On 19 September 2023 Staff Member AT sent Staff Member AP a further email. She said:

Hello Staff Member AP

Trying this again ….. maybe third time's the charm.

Would be great if you could please let me know if you're interested in proceeding with this. Please call me if easier!

Nga mihi,

Staff Member AT

[204] On receipt of Staff Member AT email Staff Member AP, who had been waiting for SM Q SM Q to return to work, sent him an email that same day asking him what he thought. As the Staff Member Q under the Holiday Park risk register Staff Member Q was designated as responsible for the falling rock/landslide geohazard risk applicable to the campground. Staff Member Q responded straight away by email saying: Staff Member AP *yes sounds good, its paid by the Climate & Sustainability team as well.*[123] Staff Member AP immediately emailed Staff Member AT advising: *Yes we would be happy for you to go ahead with this.* To which Staff Member AT replied: *That's great news! I'll get this started then. You'll hear back from me soon again with next steps.* The following day, 20 September 2023, TCC created and Staff Member AT signed a Short Form Agreement to

123 Doc 299128.

engage WSP to undertake a Natural Hazards Risk Assessment of the Mount Maunganui Beachside Holiday Park. The agreement included the scope details set out in WSP's letter of 29 August 2023, and signed by WSP on 20 September 2023. [124]

[205] On 27 September 2023, Staff Member AT, Staff Member AP and Staff Member Q attended a meeting with WSP staff to "kick off" the natural hazard report process for the Holiday Park, and discuss the next steps.

WSP – Tauranga Landslide Study – Technical Reports –July and September 2023

[206] On 31 July 2023 WSP presented a city-wide slope stability and mapping review report to TCC titled: *Tauranga Landslide Study – Technical Report*. The study area of this report encompassed everything within the Tauranga City district boundary, with the exception of Mauao.[125] Following discussions between TCC and WSP, which included a geotechnical peer review, it was decided that the city-wide mapping methodology may not provide a meaningful or appropriate assessment of Mauao. The methodology used in the city-wide review was designed to assess large areas consistently, and it did not incorporate the detailed information typically required to assess a complex landform such as Mauao. Application of the methodology was therefore considered unlikely to provide the same value as a more targeted assessment. The view reached from the discussions, was not that Mauao should be ignored, but that if an assessment was required, a targeted, site-specific hazard assessment would be more appropriate than application of the city-wide methodology. Consistently, a landslide assessment of Mauao was subsequently presented as a separate provisional scope item rather than it being incorporated into the core city-wide mapping update.

[207] An earlier version of the 31 July 2023 report had been previously provided to TCC on 6 October 2022. Following a request by TCC, a further version dated 22 September 2023 was subsequently issued by WSP which split the earlier version into two separate reports, with the latter titled: *Tauranga Landslide Susceptibility Technical*

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124 Doc 48896.

125 WSP report: *Tauranga Landslide Study – Technical Report* (31 July 2023). Note that the first final version of this report was delivered to TCC on 6 October 2022.
See paragraphs 1.3 and 3.1. Doc 115519

Report.[126] The Summary and Introduction to the 31 July 2023 *Tauranga Landslide Study Technical Report* explained its scope:[127]

> **Summary**
>
> Tauranga City includes significant areas of steep terrain that are underlain by materials that can be prone to slope failure. Tauranga City Council (TCC) is aiming to improve the understanding and mapping of landslide hazards across the district, as part of a wider initiative to research, quantify and map a variety of major natural hazards affecting the city. This study has been prepared as part of this programme and provides a city-wide assessment of landslide susceptibility.
>
> The scope of the study was evolved in discussion with TCC, and included development of an inventory of landslides in Tauranga, an assessment of landslide susceptibility and mapping this across the city, and provision of updated maps of slope hazard zones. The study area consists of the Tauranga City boundary, excluding Mauao. (emphasis added)
>
> The geology, geomorphology and characteristic mechanisms of landsliding across the study area are described, based on our long-standing experience in the area and the results of a literature review of available information. Factors that influence slope stability were identified and developed from our prior landslide hazard studies in New Zealand and from the results of the literature review, including consideration of the inventory of previous landslides.
>
> Landslide susceptibility is assessed for rainfall-induced landslides and earthquake-induced landslides which have different trigger mechanisms, and the susceptibility varied somewhat depending on these triggers. For the rainfall trigger case we have applied our experience of the Tauranga district and utilised an inventory of landslides in Tauranga and elsewhere in New Zealand. …..
>
> …….
>
> **Introduction**
>
> **…….**
>
> Tauranga City Council (TCC) is aiming to improve the understanding and mapping of landslide hazards across the district, as part of a wider initiative to research, quantify and map a variety of major natural hazards affecting Tauranga to support initiatives to enhance the resilience of infrastructure and the built environment.

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126 WSP report: *Tauranga Landslide Susceptibility Study – Technical Report* (22 September 2023). Doc 115673.

127 WSP report: *Tauranga Landslide Study – Technical Report* (31 July 2023) Doc 115519. Introduction: page 1. TCC requested that the Landslide Study Report (July 2023) be split into two separate reports to avoid confusion arising from the multiple hazard maps. This resulted in the *Tauranga Landslide Susceptibility Study – Technical Report,* and the *Tauranga Landslide Slope Hazard (IDC) Zones Study – Technical Report.*

TCC have previously invested in landslide hazard mapping supported by academic and professional studies, but this work has primarily focused on specific events or specific localities within Tauranga. None of the previous studies addressed earthquake-induced landslide susceptibility. The study detailed in this report represents a city-wide assessment of landslide susceptibility that is aligned to the current best practice and regulatory framework, and accounts for observations of landslides in heavy rainfall events in the district and in similar volcanic terrain in Japan that post-date many of the previous studies.

Conclusions [128]

…..

The susceptibility maps highlight that moderately steep to steep slopes underlain by sensitive volcanic soils are vulnerable to landslides, with the highest susceptibility areas on the steep bluffs and terrace slopes such as in Otūmoetai, Matua, Maungatapu and Matapihi. Records of past landslides also show these to be areas most prone to landslides.

[208] In a section of the report which addresses the issue of the distance that mud flow from a landslide can extend over, the WSP report gave the example of a slope failure which occurred at Welcome Bay during the 2005 storm where the debris runout extended approximately 6.5H:1V out from the headscarp and said: [129]

8.2.2 Debris/ mud flow inundation

Saturated debris and earth flows are mixtures of soil and water and can have long runout distances over flat land. The likelihood of these flows developing, and the extent of their runout, depends on the upslope catchment area and the amount of groundwater and surface water runoff available to mix with the landslide debris and develop the fluidised flow materials.

Where the path of a debris or mud flow is laterally constrained, such as in gullies or other channels, runout distances can be particularly long. In some cases, the runout distance has been observed to extend beyond the 4H:1V zone included in the TCC IDC (as shown in Figure 13).

The impacts of debris flows are generally less significant than for the near slope zone of debris deposition, but significant destruction can be caused in some cases. The debris flow that occurred in Matata during the 18 May 2005 storm is a prime example of this. …

8.2.3 Observations of landslide runout in 2022 and 2023 storms

Following a series of landslides triggered by prolonged or intense rainfall in mid-2022 and early 2023, a selected number of landslides were reviewed by WSP to record the landslide runout at each site and compare these with the 4H:1V slope runout zone. The observations

128 *Conclusions*, paragraph 10.1 page 48.

129 WSP *Tauranga Landslide Study - Technical Report* Paragraph 8.2.2 *Debris mudflow/inundation* and Figure 13. Note that this passage is not specific to Mauao and instead references examples of debris flows and landslide runout observed elsewhere within Tauranga City.

> made during this study show that the runout of landslide debris was generally encompassed by the 4H:1V zone, although saturated debris and earth flows extended further than the 4H:1V zone, as noted above. This review of landslide observations highlighted the combination of geological and geomorphic factors, such as sensitive soils, confined groundwater, relict landslides and the larger-scale slope geomorphology, that are important considerations in identifying the height and extent of potential failure and runout zones.

WSP – Tauranga Landslide Susceptibility Study – Technical Report – 22 September 2023

[209] On 22 September 2023 WSP presented a revision of the *Tauranga Landslide Susceptibility Study – Technical Report*.[130] In a paragraph headed *Landslides in Tauranga,* the report stated:[131]

> Landslide research in Tauranga has primarily focused on rainfall-induced landslides and has often been completed in relation to preceding landslide events, notably in 1979 and 2005. However, researchers from University of Waikato have investigated cyclic shear behaviour of weathered tephras, which can inform the behaviour of these soils in earthquakes (Mills, 2016; Kluger, et al., 2019)…..
>
> Landslides triggered by the 18 May 2005 storm was [sic] investigated by Hegan and Wesley (2005) and by Richards (2005). Landslides were triggered during extreme rainfall (maximum 347 mm 24-hour rainfall total), with heavy rain having also fallen two weeks prior, on 03 May. The events also caused landslides along road corridors in the region causing much disruption to the road network (Opus, 2006). The size of the 18 May storm event corresponded to a return period of approximately 100 years. Hegan and Wesley (2005) noted that groundwater infiltration at soakholes and discharge from overland surface water flow paths onto slopes had contributed to landslide initiation in many cases.

[210] As with the earlier version, this version of the WSP report, was sent to TCC's Staff Member BA who had engaged WSP. It was not sent to the Sustainability Team led by Staff Member AT and she does not appear to have been provided with a copy of it by the Asset Services Team.

The TCC Strategy, Finance and Risk Committee Meeting 30 October 2023

[211] The Strategy, Finance and Risk Committee meeting agenda for 30 October 2023 included the presentation of a report by Staff Member BA titled: *Natural Hazard and Resilience Planning – Release of Natural Hazards Information (Slope Hazard*

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130 Doc 115673
131 Paragraph 4.1, page 18.

Zones, Landslide Susceptibility).[132] The report which as I have noted above does not include Mauao within its scope, draws on and summarises information in the WSP *Tauranga Landslide Susceptibility Study – Technical Report.* Staff Member BA wrote:

> **Background**
>
> 2. Tauranga is affected by numerous natural hazards, including flooding, tsunami, coastal and inner harbour erosion, earthquakes, volcanic ash fall and land instability. Our changing climate will influence the frequency and severity of some of these natural hazards.
>
> 4. Tauranga City Council has been researching, mapping and informing our community about natural hazards for over 20 years. With an increase in understanding of known natural hazards and Tauranga's susceptibility to such events, the council and wider community will be better placed to determine risk and the necessary strategies to avoid, defend or adapt long-term.
>
> **Strategic /Statutory Context**
>
> 5. Council's natural hazards and resilience planning sits within a wider national context established under the Local Government Act 2002, Resource Management Act 1991, Building Act 2004 and Civil Defence Emergency Management Act 2002. The operative Bay of Plenty Regional Policy Statement provides the framework for roles and responsibilities on natural hazard planning which must be given effect to in all planning processes within the Bay of Plenty region.
>
> **Slope Hazard**
>
> 6. The characteristics of landslides have been studied in the Bay of Plenty for over 40 years. Following storm events in the early 2000's, slope hazard maps with slope hazard zones were created.
>
> 7. A slope hazard map identifies zones where there is potential for, or existing, instability of the slope and zones which may become inundated by a landslide. It is based on the relationship between slope height and angle. The information is available at property level. …
>
> 9. New mapping has been undertaken to update the existing slope hazard maps based on new landslide data and geomorphological mapping (study of landforms and the processes that form them). The review also included making sure the earlier defined zones (2:1 failure zone, 3:1 regression zone and 4:1 runout zone) are still valid for Tauranga. This new mapping replaces the existing slope maps.
>
> **Landslide Susceptibility**
>
> 10. A landslide susceptibility assessment, aligned with the current best practice and regulatory framework was also completed. It represents a city-wide assessment (not property-scale). ….

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[132] Doc 301275 at p 90/144.

> 13. Two new landslide susceptibility maps have been prepared, one showing susceptibility to rainfall-induced land sliding and the other showing susceptibility to earthquake-induced land sliding. Landslide susceptibility scores were classified into four categories to represent Very Low, Low, Moderate and High landslide susceptibility.

[212] The report attached detailed maps of the Tauranga area which although showing Mauao and the adjacent Holiday Park, for the reasons outlined above, did not include them within the area covered by the WSP's Rainfall - Induced Landslide Susceptibility study.[133]

30 October 2023 – WSP progress update

[213] On 30 October 2023, Staff Member AT forwarded Staff Member Q and Staff Member AP an email from WSP reporting progress with their report. WSP reported its findings from a site walkover conducted on 19 October 2023, and advised that the WSP geologist had walked the full extent of the Holiday Park, paying particular attention to the areas adjacent to the flanks of Mauao where past landslips had occurred, as well as walking the tracks above the eastern side of the park, and noted that none of the historic landslides investigated showed signs of ongoing regression or imminent failure.

WSP Natural Hazard Risk Assessment – Mount Holiday Park (1 December 2023

[214] The WSP report which had been commissioned by the Staff Member AT Staff Member AT on 20 September 2023, was presented to TCC on 1 December 2023.[134] In their covering email sending the report to Staff Member AT WSP said that it would be happy to schedule a meeting to discuss it.

[215] In its description of Mauao's geological characteristics the report stated:[135]

> The flanks of Mauao are described as Late Pleistocene-aged, Minden Rhyolite Subgroup (Whitianga Group) volcanics. Mauao is a rhyolitic dome formed by the outpouring of rhyolitic lava approximately 2.3 million years before present. The steep-sided-flat topped dome is made up of three parts; the top, a middle section, and the lower slopes. The top is comprised of steep rhyolitic bluffs, the middle section is less steeply inclined and has been used as pasture for

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133 See WSP Maps (July 2023), *IDC Landslide Hazard Management Zones, Earthquake Induced Landslide Susceptibility*, *Rainfall - Induced Landslide Susceptibility.* Sheet 2 of 15. Doc 301274 at p 437/509.

134 Doc 107810.

135 Doc 107810, at paragraph 3.2.1 (1).

sheep, and the lower slopes are comprised of moderately inclined scalloped slopes comprising thick residual volcaniclastic sediments and soils. These sediments are susceptible to land sliding, especially as they are sensitive, which is commonly associated with the clay mineral Halloysite.

[216] The report also notes that on 19 October 2023 a WSP Natural Hazard Geologist had inspected the site.

3.3 Site Walkover

On 19 October 2023, a WSP Natural Hazard Geologist conducted a site walkover with the following purpose.

- To ground truth the features of the site with the digital mapping data available, and to determine any differences that relate to natural hazard risk.

- To identify areas that are vulnerable or susceptible to natural hazards, both within the site and outside of the site with the potential to impact the site.

- To inspect the slopes and historic landslide features above the site to gain a preliminary understanding of slope stability, as well as identifying any obvious potential failure features (e.g., tension cracks).

A number of observations were documented; these are annotated on Figure 6 and detailed in Table 1.

[217] In the course of the WSP walkover and using GIS data, eight historic landslides were identified and inspected and marked on an aerial photograph of the campground and adjacent section of Mauao as Figure 6. The photograph shows the lower slopes above and adjacent to the campground, and includes the historic scarp which subsequently failed on 22 January 2026.[136] In a table setting out details of observations made in the course of a site walkover, the report noted the presence of "Steep slopes, banks and cut faces vulnerable to slope failure" and "Historic Landslides", which were detailed as follows:[137]

Many of the steep slopes along the toe of Mauao, with some appearing to be comprised of historic landslide debris (e.g. Landslide 5 in Figure 6)

[136] See Figure 6 on page 8. Historic landslide feature 6.
[137] Page 8- 9.

Steep natural slopes and cut faces along the terrace. Slopes are particularly steep on the south of the terrace area. Shallow soil erosion and undercutting of the ground surface is evident in this area.

Historic Landslides.

Eight landslides were identified via GIS data and inspected during the walkover for signs on instability and/or ongoing movement e.g., tension cracks, slumping, presence of soft ground.

None of the landslides investigated showed signs of imminent failure or significant movement. Scarps showed sign[s] of "healing" where topography has smoothed over and vegetation is returning.

Landslide 7 shows minor tension cracking within the leaf litter in the centre of the slide scarp (Figure 24 in Appendix B). A previous tension crack formed adjacent to the landslide scarp along an access path has slumped slightly (Figure 22 in Appendix B)

[218] As well as: volcanic activity, earthquakes, coastal marine processes and inundation, the report identified extreme (prolonged or intense) rainfall as being a natural hazard which could result in flooding, overland water flows, and rain induced landslides:[138]

4.5.2 Rain – Induced Landslide

The Tauranga region is prone to slope failures during high intensity rainstorms as a consequence of the highly sensitive, often clay-rich volcanic soils. The slopes of Mauao are particularly prone to landslides due to the steepness of their slopes and the weakly formed colluvial, alluvial and marine sediments that form thick deposits of the lower flanks. An extreme event can cause multiple landslides, for example, in January 2011 when intense rainfall resulted in about 80 mass movements with eight large landslides causing visible displacement of sediment and closing trails (Tonkin and Taylor, 2011).

A study by Martin and Brideau (2014) catalogued mass movements throughout a 68-year period on Mauao and identified four main types; rotational slides, debris flows, debris avalanches and rock falls. The majority of failures were shallow-rotational slides concentrated on the south-western and north-eastern lower flanks (Figure 10). Observations of historic landslides suggest that runout distances are typically less than 100 m.

Similar slope conditions (angle and soil composition) are assumed for the slopes above the site, and small rotational failures with run out distances of less than 100 m are expected. There is also a strong correlation between rainfall-triggered landslides after deforestation. Much of the lower flanks of Mauao have only grass cover. A WSP report in November 2022 (WSP, 2022) assessed slope risk around the base track of Mauao and described one area to the north of the site (landslides 2 and 3 in this report) as having a risk rating of 'Medium to High' based on a qualitative assessment of the likelihood of slope failure above or below the track.

138 At paragraph 4.5.2 page 19.

In 2023, TCC updated the city-wide slope maps based on a review of new landslide data, geomorphological mapping and new topographic data. This assessment excluded Mauao, but we understand that it may be included in a future mapping exercise. To provide a qualitative assessment of the potential for slope failure we used a simplified approach based on the TCC methodology.

A slope failure map for Mauao, showing areas that are more susceptible to landslide occurrence and inundation from slope failure, is provided in Appendix A Figure 6. The failure zone, where landslides typically begin (Figure 11) was determined by examining the extent of historic landslides formed on the flanks above the site. Past studies and GIS data indicated that slope failure typically occurs at elevations of approximately 55 mRL and terminating at approximately 10 mRL. Therefore, we have used these elevations to define the upper and lower extents of the failure zone.

Multiple runout zones (land downslope of the failure zone where debris can inundate) were created by projecting slope angles from the crest of the failure zone (as seen in Figure 11). For this analysis we use a 2.5H:1V slope to estimate an approximate *more frequent* scenario (e.g., akin to a 1-in-100-year event) with runout distance similar to those observed over the last 80 years of 100 m that may result from intense rainfall. We also use a 4H:1V slope to estimate a *less frequent* scenario (e.g., an approximate 1-in-1000-year seismically induced event).

The steep banks around the raised terrace area were also considered, with a failure zone designated between 15 mRL and 5 mRL, and runout zones projected based on these elevations.

We have not included a Regression Zone because regression moves upslope and does not pose a hazard to the site.

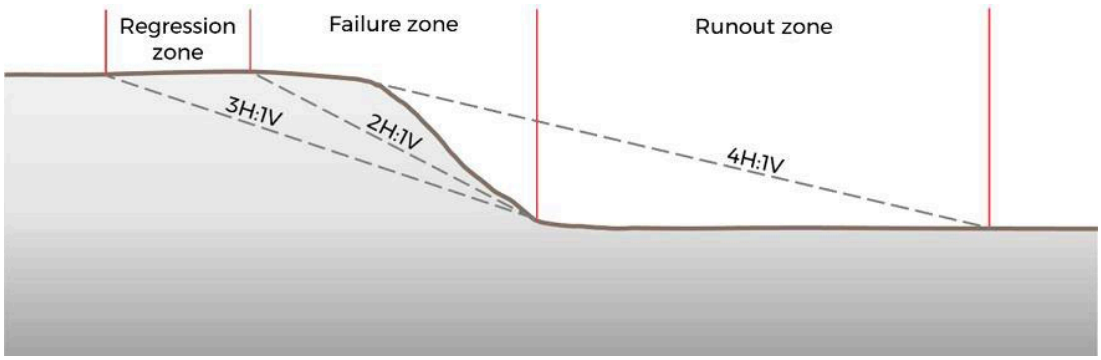

Figure 11. Example of landslide Failure, Regression and Runout zone calculations. Source: TCC website.

Based on our slope failure map, a proportion of the site is within the runout zone. Particularly vulnerable areas include the campsites adjacent to the toe of Mauao. Much of these areas are within the runout areas of historic landslides. Reactivation of these failures is possible during heavy rainfall (e.g., Figure 10 above).

[219] The report sets out WSP's AEP (Annual Exceedance Probability)[139] assessment of the risk of landslide and rockfall occurring affecting health and safety in relation to two scenarios. A 2.5H:1V slope runout is assessed as having a 1% probability of occurring and a 4H:1V slope runout is assessed as having a 1 in 1000 probability of occurring. The report describes the health and safety consequences of these scenarios if they occurred, as being "Minor" and "Medium", and "Low Risk" and "Medium Risk", respectively. For the purposes of making a qualitative assessment the report says that the assessments assume a full capacity/occupancy of the site to account for 'worst case' consequences, (*8000 guests during high peak summer with little or no advance warning, if applicable)*. The 2.5H:1V slope runout assessment is primarily assigned to rainfall hazard and is given a 1% AEP. The 4H:1V slope runout, while primarily assigned to seismic triggers, *could also be indicative of large failure caused by very severe weather and/or cyclones*, and is given a 0.1% AEP.[140]

[220] Referring to natural hazards generally, the report suggests a number of controls for reducing risk, including:[141]

- Consider in-depth risk assessments for natural hazards where on-site risk [is] calculated as Medium to High.
- Consider undertaking further study to calculate spatiotemporal exposure to natural hazards with the aim of limiting exposure for population groups that spend extended time within the site. e.g. long-term residents, staff and /or permanent staff.
- Ensure the site has clear and robust emergency management plan and procedures where warning/alerts, evacuation and exclusion zones are established and clearly communicated to every user of the facilities.
- Staff should be well-versed on the hazards and be capable of evacuating users should the need arise.
- A clear and easy to read (visual) pamphlet outlining the dynamic natural environment in which the Park is situated and what to do in an emergency.

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139 Annual Exceedance Probability (AEP) expresses risk as a percentage (e.g. a 1% AEP flood has a 1% chance of happening in any year. It does not mean that it is predicted to occur only once every one hundred years. It means there is a 1-in-100 chance every year, regardless of whether a similar event happened the previous year).

140 Table 14, page 29.

141 Table 16, page 31.

[221] Addressing specifically the natural hazard risk posed by landslides and rockfall the report sets out suggested controls, including:[142]

- Consider a site-specific, quantitative assessment of slope hazard and rockfall for the site to obtain accurate data for risk assessment e.g. using the AGS Landslide Risk Assessment or Waka Kotahi's Z /44 Risk Management Practice Guide.[143]

- Develop a Trigger Action Response Plan (TARP) for the site, with establishment of slope hazard alert/warning thresholds. Thresholds may be based on the severity of landslide triggers (e.g., forecast rainfall).

- Consider land use within the 2.5H:1V runout hazard zone. Campsites and cabins immediately adjacent to the toe of a slope or within the path of a historic landslide could be moved. During heavy rainfall these areas could be evacuated or excluded.

- Regular monitoring of the slopes i.e. once per year should be undertaken to identify any potential slope movement and to build up an inventory for the site. This may allow for proactive management of potential landslides.

- Report any changes, such as increased water seepages or water not flowing from the spring, tension cracks, movement or bulges to a geo-professional for further assessment.

[222] The report summarises WSP's risk assessments with tsunami given a High Risk rating, flooding given a Medium Risk rating, and landslides and rock fall given a Low Risk for more frequent, smaller events and a Medium Risk rating for less frequent, larger events. The report concluded:[144]

> A summary of suggested controls, which is by no means exhaustive, has been provided in Table 16. It also outlines factors that TCC should consider when future planning at the Holiday Park due to impact of climate change. It should be noted that the risk level may not be able to be reduced from one level to another (i.e. high to medium) but the implementation of controls can minimise the consequences of the hazard.
>
> We recommend that TCC consider implementing some of these controls to ensure the future resilience of the Mount Holiday Park and to minimise the hazard consequences and risk to both Council and the community.

[223] As noted in the Introduction, WSP had been engaged by TCC to undertake a Natural Hazards Risk Assessment (NHRA) of the Beachside Holiday Park. The WSP

142 Table 16, page 32.
143 AGS refers to the Australian Geomechanics Society (2007) Guidelines for Landslide Risk Management.
144 At page 33 paragraph 6.

report said the risk assessments had been made by using a methodology *in general accordance with* the BOPRC RPS natural hazard risk management policy framework.[145] The report explained that while WSP had undertaken a qualitative evaluation of the risks in accordance with steps 1 to 4 of the RPS (the *Primary Analysis*), it had not undertaken step 5, (the *Secondary Analysis*) of the risk assessment methodology which sets out the method for calculating the annual individual fatality risk (AIFR):[146]

> Step 5 of the methodology for calculating the Annual Individual Fatality Risk (AIFR) has not been conducted for this study. This is due to a number of complicating factors including:
>
> > The variable number and timeframes of the population staying in the site. For example, guests may stay only 1 day to 1 week per year (or only once in their lifetimes), while permanent staff may spend 40+ hours onsite, and other staff may live onsite permanently.
> >
> > Seasonal changes to guest numbers, and the unpredictability of where guests may be staying within the site (their location in regard to hazard areas).
> >
> > The types of accommodation (e.g., cabins, campers, caravans, tents) that influences the consequences that different hazards (and their intensity) might have. A more quantitative and in-depth study utilising visitor and staff data from the site is required to determine an AIFR.

[redacted] *endeavours to set up a meeting with the campground team*

[224] On Sunday 3 December 2023 [redacted] emailed [redacted] and [redacted] (cc to [redacted][147] and [redacted]) attaching a link to WSP's 1 December 2023 report. She said: [148]

> Kia ora [redacted]
>
> We have now received the final report from WSP on the natural hazard risk assessment at Beachside Holiday Park – see attached. Page[s] 30-32 summarises the risk ratings and hazard control suggestions.

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145 Bay of Plenty Regional Council, Regional Policy Statement. Appendix "L" – Methodology for Risk Assessment. Note that the Methodology for Risk Assessment now appears in Appendix "I" of the current version of the Regional Policy Statement.

146 Paragraph 5.1, page 22.

147 [redacted] working in [redacted] team.

148 Email – [redacted] to [redacted] and [redacted] (cc [redacted]), 3 December 2023. Doc 35520

It would be great to meet up with WSP to discuss the results. Should I try to find a time in our calendars before the end of the year? Will you be able to read the report by then?

Staff Members BA and BB on copy FYI (let me know if you're keen to join the meeting).

Nga mihi,

Staff Member AT

[225] Having received no reply in the meantime, on 12 December 2023 Staff Member AT Staff Member AT sent a follow-up email to Staff Member Q and Staff Member AP (again copying in Staff Members BA and BB), asking if they had any comments about when would be a good time to meet with WSP to discuss the report.[149] Once again there was no reply.

[226] On Monday 5 February 2024, Staff Member AT sent another follow-up email to Staff Member Q and Staff Member AP (cc Staff Member BB) asking them when they would like to catch up to discuss the WSP report.[150]

[227] And then again, on 1 March 2024, Staff Member AT sent yet another follow-up email to Staff Member Q and Staff Member AP (cc Staff Member BB). This time she said:[151]

Good morning Staff Members Q and AP

Maybe fourth time is the charm….

Trying again to reach you both as I suggest that we walk through the recommendations together with WSP. Otherwise I'll close out the project.

Nga mihi,

Staff Member AT

[228] This time Staff Member Q responded, saying that he had spoken to Staff Member AP and he was keen to meet. Staff Member Q suggested that the meeting should be held at the

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149 Email – Staff Member AT to Staff Member Q and Staff Member AP (cc Staff Members BA and BB Staff Member BB) 12 December 2023. Doc 289335

150 Email – Staff Member AT to Staff Member Q and Staff Member AP (cc Staff Member BB) 5 February 2024 - Doc 289335

151 Email – Staff Member AT to Staff Member Q and Staff Member AP (cc Staff Member BB) 1 March 2024 -Doc 289335

Holiday Park and that Staff Member AT send out meeting invitations.[152] Staff Member AT emailed back saying that she would check their calendars and make arrangements for a meeting with WSP *in the coming weeks*.[153] Then on 4 March 2024, Staff Member AT emailed Staff Member AP, Staff Member Q, WSP and Staff Member BB with a Microsoft Teams meeting invitation for 18 March 2024, attaching another copy of the WSP 1 December 2023 report, and suggesting they all meet at the Holiday Park to go through WSP's natural hazard risk assessments together.[154]

[229] On the day of the scheduled meeting, Staff Member BB emailed Staff Member AT to apologise that he was unable to attend the meeting. When asked by Staff Member AT in an email whether there was anything he would like her to pass on to the meeting, he replied: *I don't think so, reading the report it looks like everything I could think of is covered.*[155] As Staff Member AP was unwell with Covid -19, he sent Staff Member Q a text message on 18 March explaining his situation and apologising that he was unable to attend the meeting.

[230] Staff Member AT and Staff Member Q met with WSP on 18 March 2024. There are differing accounts of what was discussed which I record below.

[231] Staff Member AT recalls that WSP went through the findings in their report, and there was discussion about risk management options. She told me that the discussion during the meeting focussed on mitigating the risks presented by falling boulders and flooding, as those were considered to be the most relevant natural hazards and were the risks which had been assessed by WSP as having the highest risk ratings, whereas landslides had been rated by WSP as having a lower level of risk. Staff Member AT did not recall any focussed discussion regarding WSP's recommendation for the development of a TARP. She said that at the conclusion of the meeting the options for

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152 Doc 289335.

153 Doc 289335.

154 Doc 107811. WSP has advised that after sending the report and offer to schedule a meeting on 1 December 2023, it provided multiple meeting date options to TCC at their request on 5 December 2023 but was advised on 18 December 2023 that TCC couldn't meet in December and to reconnect in January 2024. WSP did not hear from TCC in January, so followed up on 7 February 2024 to see if TCC would like to catch up to discuss the report. TCC responded on 3 March 2024 to suggest times for a meeting in March, with WSP responding on 4 March 2024 which was followed by a meeting invitation sent by TCC on the same day. Whilst it was a Microsoft Teams meeting invite, the venue for the meeting was the Holiday Park.

155 Doc 289317.

implementation of the recommendations in the report were to be considered by the Holiday Park management in the context of their forthcoming planning and budgeting process. Staff Member AT explained that she saw her and her Climate and Sustainability Team's role as being essentially an advisory one, and once she had assisted the Holiday Park team to get information about the natural hazard risks relevant to their location and operation, it was then up to that team to act on the information and recommendations they had been given, and to use the information for the purposes of their own planning and risk assessments. Staff Member AT said that at that point she and her team would be *stepping back* and had *closed out the project from our end.* She says that apart from recording something like "report received" on her team's action-tracking sheet there was no formal way of recording completion of the project. Staff Member AT Staff Member AT says that despite all that, she probably did say to Staff Member Q that if they needed any help with anything, he should *reach out* to her and her team.

[232] When I asked whether she had considered following up with Staff Member Q and the Holiday Park regarding implementation of the WSP recommendations, Staff Member AT said that she did not want to be sending them more annoying emails, and she did not want to elevate the matter up through her own reporting line as doing that would inevitably have got back to the Holiday Park team, and would be likely to appear to them as her going behind their backs. She explained that the Climate and Sustainability team was comparatively new in TCC, and that when they approached other teams to offer advice they had sometimes been challenged and asked, *what is your mandate?* Staff Member AT said that as a result, she was well aware that she needed to *stay in her own lane* as the attitude she encountered in her dealings with some other TCC teams was that of, *we know what we are doing here.* She added, that as a relatively new employee leading a new programme of work, there was a personal and organisational element to these interactions, and she was conscious that the credibility of both the programme and the team depended on building trust and influence with the longer - serving operational teams.

[233] I also interviewed Staff Member Q He confirmed that Staff Member AP had forwarded him the emails Staff Member AT sent him regarding engaging WSP to undertake a natural hazard risk assessment for the Holiday Park, but he had no explanation for not responding until after Staff Member AT fourth email attempt to get

a response. He confirmed that he received Staff Member AT email of 3 December 2023 enclosing the WSP report, and acknowledged that he did not respond to her request to attend a meeting with WSP to go over the report. He also acknowledged that he did not reply to her follow up emails dated 12 December and 5 February 2024, saying: *I suppose, well it's just things were just getting busier for us at the Park. And that's our busiest time.* However he confirmed that he had spoken to Staff Member AP after receiving Staff Member AT fourth email and agreed to attend a meeting with WSP, suggesting it take place at the Holiday Park. He said he had read the WSP report prior to the meeting on 18 March 2024. Staff Member Q said that the meeting was almost all about the risk of boulders falling and flooding affecting the campground, and *not so much about landslides.* He said that there was also talk about placing netting around the campground to stop boulders from the mountain entering the campground. He said the cost of installing netting to reduce that risk was very expensive and well beyond his authority to deal with. He said that Staff Member AP would have had to deal with something involving that level of cost, but he was not at the meeting. When I read the section of the WSP report containing the recommendation for the development of a TARP with thresholds or triggers based on rainfall levels to Staff Member Q he said he had not heard of the term TARP prior to his interview with me. He said that he did not think that the topic of developing a TARP was mentioned by anyone either at the 18 March meeting or after the meeting. He said no one had said anything about watching out for muddy water flowing from the toe of the slope as being a warning sign of a possible slope failure. He said the discussion at the meeting *had nothing like that*. He said the discussion was pretty broad with mention made of the option of possibly getting nets to stop the boulders, and discussion about flooding (*well, we knew about the flooding*), and tsunamis – *they were the three.*

[234] Staff Member Q was asked about whether any action points had come out of the meeting for him to deal with, and he said: *No, I don't think anything come* [sic] *of that meeting, because* SM AT *was the one who organised it.* He said that after the meeting he did not follow up the recommendation for the development of a TARP. He said that the responsibility for arranging that sort of thing lay elsewhere – with someone who knows what they are doing, *probably engineers*.

[235] In contrast to the recollection of these two TCC staff, WSP advise that their staff who attended this meeting recall that landslide hazards and TARPs were discussed, and were the primary focus of the discussions. WSP advises that as landslide hazard was a significant component of its assessment and substantial part of their December 2023 report it and TARPS were discussed in detail. WSP comments that their report did not conclude that no further action was required. It says that further action was required and that was made clear to TCC. WSP says that following the meeting it understood that TCC would consider the findings in the report and decide whether further investigations or mitigation measures would be pursued.

[236] In the context of this review I am not in a position to determine which recollection is the most accurate and reliable, and I make no finding on the issue.

[237] What is clear, however, is that WSP received no further instructions from TCC. WSP advises that it is not aware of any subsequent engagement with TCC on the report. WSP correctly notes that decisions about whether to commission further investigations, implement the suggested controls, or take operation action remained matters for TCC.

[238] The absence of any follow up or implementation by TCC of the suggested controls contained in the WSP report arose in the context of Staff Member AT understanding of her role being limited to that of an advisor having no authority or responsibility to follow up with implementation of any recommendations, and SM Q SM Q belief that any implementation of the recommendations was not his responsibility, and was up to other more qualified and experienced people within TCC to deal with. As a result of Staff Member AP not attending the 18 March 2024 meeting due to illness, he had unfortunately missed an opportunity to gain a better appreciation of the nature of the landslide risk described in the report, and any explanation of WSP's suggested controls including the establishment of a TARP.

[239] The interval between receipt of the WSP report on 1 December 2023 and the eventual meeting with WSP on 18 March 2024, meant that the geohazard risk of landslide and rockfall identified in the report was not addressed for a period of 16 weeks. Staff Member Q says that after receiving the report and after attending the 18 March

2024 meeting with WSP, he did not consider that implementation and following up the report's recommendations was either his or the campground's responsibility. While SM AP SM AP did not attend the 18 March meeting, he had attended the 27 September 2023 meeting at which WSP had provided their progress report and reported that their investigation of the historic landslides showed no signs of imminent failure, which finding they had repeated in their December report. As Staff Member Q was the designated risk owner, Staff Member AP considered that it was Staff Member Q who had carriage of the matter and had responsibility for managing the risks and following up the suggestions made in WSP's report. And Staff Member AP says that from his attendance at the 27 September 2023 meeting with WSP he did not understand that there to be any urgency as regards controls suggested in the report, and knowing that other TCC staff having specialist expertise in geohazards had also been copied in on the WSP report, he had proceeded on the basis that the matter was being dealt with appropriately, and required no further action on his part.

[240] Staff Member Q did not take any steps either following his receipt of the WSP report or following the 18 March 2024 meeting to notify the risk of a landslide occurring into the campground which had been identified in the WSP report, in accordance with the provisions of the TCC Risk Management Policy and Framework, and the Holiday Park Risk Register which I shall set out below.

[241] Similarly, Staff Member AT decision to step back and leave any decisions and further actions to the campground management without any follow up, had left open the possibility that the landslide risk that had been identified would not be addressed at all unless the campground and the Staff Member AP SM AP did something about it. Staff Member AT decision not to go outside her "lane" and not intrude into the Holiday Park management's domain, and not report the matter to her Staff Member AZ meant she was effectively leaving any future implementation of the WSP report to the Holiday Park management. This also meant that although she knew about the background and reasons for getting the WSP report, and the nature of the attention and response being given to it by Staff Member Q unless some other person or mechanism within TCC brought the WSP report and its recommendations to the attention of those senior staff having responsibilities elsewhere within the Risk Management Framework for the identification,

management and mitigation of health and safety risks in TCC's operations, the risk would continue to exist.

[242] As I shall detail below, the provisions of TCC's Risk Management Policy and Risk Management Framework which were designed and intended to ensure that risks such as this would be identified, and once identified mitigated, managed, and monitored effectively were not adhered to by those having responsibilities for carriage of this process and having knowledge of the existence and nature of the risk which WSP had identified.

[243] Although Staff Member AT has explained that she understood that the role of her Climate & Sustainability team was to provide advice to other TCC teams, and not to become directly involved in their operations, adopting that approach did not obviate the obligation she had to notify the risk in accordance with the Risk Management Policy and Framework. By Staff Member AT not notifying the landslide and rockfall risks to the campground and its occupants which had been identified in the WSP report, the risk assessment and management process established by the Framework was not followed, and the opportunity that TCC had in December 2023 to take steps to address and mitigate the risk was missed. Instead, any future mitigation and management of the risk was left in the hands of Staff Member Q and Staff Member AP, and the indication Staff Member Q had given at the conclusion of the 18 March 2024 meeting that the campground would consider any future action in the context of preparing their next budget was an indication that any immediate follow-up and implementation of the WSP recommendations was unlikely.

[244] I also note that upon receipt of the WSP report on 1 December 2023, SM AT Staff Member AT had emailed it to Staff Members BA and BB Neither had been directly involved in commissioning or undertaking in the workstream Staff Member AT was running, and Staff Member BB had only recently joined TCC. Staff Member AT sending them copies of the report appears to have been done on an 'FYI' basis, rather than with any expectation of further involvement unless they were interested and wished to become involved. Staff Member AT also sent copies of the report to Staff Member BD Staff Member BD who had recently joined her team in December 2023 to support her 'on-boarding" and understanding of relevant work, and to Staff Member BE

Staff Member BE who reported to her. Neither Staff Members BD and BE SM BE were in positions which required them to take any steps in relation to the WSP report and its recommendations, other than as instructed by Staff Member AT

[245] In January 2023 Staff Member AZ took over the position of Staff Member AZ Staff Member AZ from his predecessor Staff Member BI As Staff Member AT Staff Member AT reported directly to Staff Member AZ. Although Staff Member AT maintained a regular fortnightly reporting meeting along with ad hoc discussions, emails, and Teams chats with her manager, it appears that she did not send him the WSP report and did not discuss it with him in any detail. Staff Member AT says that her reporting and discussions with Staff Member AZ were generally focussed on her overall workload, work priorities, and matters of a general nature, rather than detailed technical discussions on specific matters. She notes that between August 2023 and May 2024, she led the delivery of an in house 'roadshow' seeking to implement Council's Sustainability Plan within the organisation. During this period she and her team met and spoke in-person with over 250 TCC staff to educate them on the plan and 'upskill' them on climate and resilience issues and how they could integrate it into their work. She says that while she kept Staff Member AZ informed about the work she was doing at a high level, which included work relating to the natural hazard risk assessment at Mauao, he was not involved in the detailed technical aspects or asset-related decision making which were matters being managed by those persons responsible for the relevant assets and functions.

[246] I have also spoken to Staff Member AZ who says that Staff Member AT did not send the WSP report to him, and that he cannot recall whether she ever raised it and its recommendations with him, and that he was unaware of the risks that had been identified in the report or the recommendation that a TARP be prepared. I also note that the amount of WSP's fee for preparing the report was within Staff Member AT delegated authority, so that she could commission the report herself without seeking his prior approval.

[247] In the absence of the risk being notified in accordance with the *Spaces and Places Master Risk Register* and the expectations and requirements of the *Risk Management Policy* and *Risk Management Framework,* there were no other layers of

supervision or oversight of what was being done by anyone else within the TCC to ensure that the nature and gravity of the risk was being effectively considered and assessed. As a consequence the landslide risk to the campground as identified in the WSP report, was not recorded on the TCC risk register, and was never considered by the Strategy, Finance & Risk Committee.

[248] The cumulative effect of this sequence of events was that, although WSP had identified the landslide risk and recommended a specific mechanism to mitigate it (by means of a TARP) no one within TCC took the steps necessary to further consider or implement its recommendations. That outcome was not, in my assessment, attributable to any single individual. It was the product of a series of intersecting gaps which resulted from an advisory team (Climate and Sustainability) which understood its role to have ended and did not escalate it, and an operational management layer (specifically, Staff Member Q), who understood the implementation of geotechnical recommendations to be the responsibility of others.

[249] This misalignment of expectations and responsibilities was not identified and rectified because the risk was not notified and escalated as the Risk Management policy required, meaning it did not come to the attention and oversight of the Strategy, Finance & Risk Committee. There being no notification and escalation of the risk, there was no-one at a higher level of the organisation with the information, and responsibility to make or initiate an independent assessment of the gravity of the risk which had been identified and ensure the recommendations in the WSP report were being effectively implemented.

[250] The recommendations accordingly fell into the gap between the team that had commissioned the assessment and the team responsible for the asset, and the opportunity to put in place measures to mitigate the landslide risk to occupants of the campground was lost. The systemic features that allowed this to occur —the failure to notify the risk in accordance with the TCC Risk Management Policy, and Spaces and Places Master Risk Register, and the absence of any central oversight of consultant recommendations — are matters I shall address in my recommendations.

The Strategy, Finance and Risk Committee Meeting 19 February 2024

[251] On 19 February 2024, the Strategy, Finance and Risk Committee met. On their agenda was the topic: *Issues and Option for Draft Response to Landslides Policy.* A report on the matter had been authorised by Staff Member BG Staff Member BG and prepared by Staff Member BF, and Staff Member BH. The report recommended that the Committee receive the report and agree to a new policy outlining TCC's position on responding to landslides. While the new landslides policy was unrelated to Mauao,[156] and was directed at how TCC would respond to landslides occurring in its area generally, and whether it would take responsibility for and contribute to the cost of remediating damage caused, the report nevertheless provides another example of the appreciation within TCC, of the significant risk landslides pose in Tauranga. The report said:[157]

> 7. In 2023, Tauranga like other areas of New Zealand, experienced landslides following a period of prolonged and, at times, intense rainfall. Tauranga has a history of landslides. Tauranga is prone to rainfall induced landslides, which to date have resulted in an average of approximately 100 EQC claims annually since 2000, see attachment two for a breakdown of claim requests. Climate change is expected to result in a greater frequency and intensity of climate extremes resulting in an expectation of increasing landslide frequency..
>
> 8. The council, and Bay of Plenty Regional Council holds information on natural hazards to support property owners and purchasers to understand the natural hazards that may impact property within Tauranga. This includes information on hazards such as flooding, liquefaction, slopes, inundation, tsunami and coastal erosion. Information available through the new Toka Tū Ake – EQC portal also allows buyers to check if a property has had a prior claim for damage from a natural hazard.
>
> 9. The council's natural hazard information is updated periodically as improvements are made to the data. The council uses these updates as an opportunity to remind property owners of their responsibilities and options available to them to improve their resilience. The council also provides information from regional council on Land Information Memorandums (LIMs) and through mapping tools.

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156 The Draft Response to Landslides Policy specifically states: Scope: 2.2 *This policy is not intended to cover: …. decisions on council administered land that is not council owned (for example, Mauao and sub-regional parks) due to the need to consider the relevant management agreements for these areas.* Doc 301266, page 93.

157 Doc 301266, page 80.

TCC Natural Hazards Resilience and Adaption Forum

[252] On 5 September 2024 the Sustainability Team held a Natural Hazards Resilience & Adaption Forum. The forum presenters reported and reviewed the natural hazards risk assessment findings which had resulted from the process led by the Sustainability team with Tonkin & Taylor in 2023. Staff Member AZ Staff Member AZ, presented on *Climate Resilience and Adaption.* During his presentation Staff Member AZ noted that Tauranga is prone to natural hazards and that: *There are many steep slopes made up of rocks and soil that may be prone to slips and landslides.* He noted that effective climate adaption and investment planning required a clear vision - across all TCC departments - for reducing vulnerability, ensuring sustainable infrastructure, and fostering community resilience. Staff Member AZ concluded his presentation by referring to five principles described as *GUIDING OUR ACTIONS,* which included:

> - Unified Direction : Aligns all activities with a clear approach to risk and resilience.
>
> - Informed Decision-Making: Framework for decisions based on principles and risk assessments.

The TCC Emergency Preparation & Response Standard - November 2024

[253] TCC's Emergency Preparation & Response Standard was issued in November 2024. Its purpose was to: *outline the requirements to ensure Tauranga City Council locations and assets have undertaken emergency planning and have an effective and active emergency management plan in place.* The Standard applies to all TCC owned, tenanted, and multi-use buildings. The *Key Responsibilities* include providing an evacuation procedure. The Standard requires an evacuation scheme to be prepared in respect of buildings where accommodation is provided for six or more people. *e.g., Mt Holiday Park.* The Standard requires each location to develop a site-specific emergency response plan setting out the specific actions to be taken should an emergency occur, stating:[158]

> …. It is the responsibility of the Site Manager to ensure these are developed, maintained and reviewed annually or post incident.

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158 Doc 34766.

> The ERP (emergency response plan) will consider the various scenarios that may cause an emergency event (including natural disaster). While often similar, each scenario should have a documented response.
>
> Scenarios that might be considered applicable in the area are as follows:
>
> Incident management /escalation process to be included in all ERP's.
>
> Ensure persons who may require particular assistance, are included in your emergency response plans.
>
> Guidelines, contact information and procedures for how information will be shared, during all phases of an unexpected occurrence that requires immediate action, will be included in the individual Emergency Response Plans.

The Bay of Plenty Hazardscape Report – March 2025

[254] In March 2025, the Bay of Plenty Civil Defence Emergency Management Group released its Bay of Plenty Hazardscape Report. The foreword explained that:[159]

> The Bay of Plenty Hazardscape Report has been developed to inform Bay of Plenty communities of hazards impacting the region to support community preparedness.

[255] The report contains a comprehensive description and review of the "overall landscape of hazards in a region, encompassing both natural and human induced risks". In a section titled *Slope instability,* the report notes that slope instability (landslides) can be triggered by natural events such as heavy rainfall, earthquakes, or volcanic activity as well as activities like deforestation, construction, and land use changes.[160] In relation to the causes of slope failure, the report observed:[161]

> **Excessive water and inadequate drainage.** During heavy rain when soil becomes saturated and water takes the place of air between the grains of soil, the earth in slopes becomes a lot heavier and more prone to movement.

[256] The report gives several examples of significant rain induced landslides occurring in the Bay of Plenty including the Matata Debris Flow on 18 March 2005 caused by intense rain (more than 200 mm in some areas over a short period) which

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159 Bay of Plenty Civil Defence Emergency Management Group, *Bay of Plenty Hazardscape Report,* March 2025.
160 Page 51.
161 Page 51.

saturated the soil and led to a large scale landslide. Other examples referred to are the landslides occurring between May 2010 and June 2011 following high rainfall events passing over the eastern Bay of Plenty triggering landslides within the escarpment slopes that form the backdrop to Whakatane and Ohope Beach. Ohope was the most severely affected area with some 22 houses being directly affected by landslide debris, resulting in a severe injury in 2010, and a fatality in 2011.[162]

[257] In a section headed: *Hazard Management – what to do and what this means for you,* the report stated:

> Slopes and retaining walls can crack, move or even collapse, particularly if they're affected by weather events, earthquakes or other natural hazards. **If you can see slips, ground movement or debris on your property there may be a chance that the land is undermined and may fail.**
>
> **What to do?**
>
> If there is property damage (i.e. damage to buildings, not land) but no injuries call your local council to assess if the buildings are safe to occupy.
>
> Stay away until authorities give the all clear, as further landslides can occur progressively, often some time (hours or days) after the first slip. Be aware of any changes to your property/ground following a landslide or major rainstorm/earthquake. In particular you should look for new cracks or ground bulging.
>
> **What to look for – has your property been impacted by a landslide?**
>
> - **…**
> - recent movement such as leaning power poles, trees, and retaining walls
> - **muddy water flowing down slopes or springs forming**
> - unusual sounds such as trees cracking, rumbling or rocks falling or knocking together
>
> (emphasis added)

[162] Page 54.

The TCC Emergency Response Draft Procedures Plan – Infrastructure Maintenance Team (March 2025)

[258] On 20 March 2025 the TCC Infrastructure Maintenance Team issued a draft Emergency Response Procedures Plan. While the system and procedures described in the document are obviously focussed on the response to emergency situations affecting TCC infrastructure, the document is relevant in the present context as an example of the development of a "TARP-like" response plan by another division of the TCC organisation. The draft plan's executive summary stated:

> This Emergency Response Procedures Plan provides a reference case for actions that need to be taken with regards to all infrastructure-related incidents impacting on the provision of Transport Infrastructure and Utility Services to the general public in Tauranga City. The Emergency Response plan formalises responsibilities as events occur and escalate.

[259] Section 2 is headed: *Trigger Mechanisms for Emergency Declaration.* The document then sets out a series of trigger points as *Infrastructure Stress Indicators*. It explained:[163]

> This section outlines a framework for triggering an incident response from the council's Infrastructure Maintenance team based on quantitative data points, with examples from a global perspective and their respective sources.

[260] The draft plan identified *Trigger Points* for emergency events including: Surface Flooding; Blocked Stormwater Systems; Blocked Roads; Debris on Roads; Damaged Roads and Coastal Erosion and **Slips**. The trigger and actions prescribed for slips being:[164]

> Slips
>
> Trigger Points
>
> - Slope movement (greater than) 5 mm/day
> - Ground deformation (greater than) 10 mm
> - Rainfall intensity (greater than) 25 mm/hour

[163] Page 7.
[164] Pages 7 and 8.

Recommended Actions

- Alert geotechnical and structural engineers
- Enforce road or area closures if near critical facilities.

[261] In a section titled: *Communication and Coordination* the draft plan stated:

> Central to all these trigger mechanisms is the seamless integration of real-time data into the decision-making processes. Data is collected via automated sensors, analysed on digital dashboards, and verified by human operators before triggering multi-agency alerts. This hybrid model, combining technological rigor with on-ground expertise, ensures that every potential emergency scenario is handled with precision and urgency.
>
> …..
>
> By integrating these robust triggers into its Emergency Response Plan, Tauranga City Council guarantees that the Maintenance Team and its partners are consistently equipped to detect, assess, and respond to emergencies. The use of precise, data-driven thresholds ensures that each trigger not only signals immediate action but also plays a critical role in optimising resource mobilisation and minimising adverse outcomes across various emergency scenarios.

TCC engages HD Geo for Mauao monitoring - early 2025

[262] As I have noted, commencing in 2003, Avalon had been engaged by TCC to provide reports related to the risk of rockfall and to carry out regular monitoring. TCC's engagement of Avalon had proceeded largely on an ad hoc basis, and during later years it appears there was no written contract of engagement. Over the years a practice had developed whereby Staff Member E would contact Neil McHugh of Avalon to request a report in relation to a specific event such as a rockfall, or following storm damage when erosion may have increased the risk of rockfalls occurring. Otherwise an informal routine with Avalon providing bi-annual monitoring reports had developed. Following Avalon's August 2022 report there was a hiatus which continued for almost two years during which Avalon was not engaged by TCC. Staff Member E and Mr McHugh differ as regards a conversation between them following the Avalon August 2022 report. Staff Member E says that Mr McHugh recommended that the bi-annual monitoring be changed to every 12-18 months due to the significant vegetation growth since the Mauao fires, and that is why there was an almost two year hiatus. Mr McHugh says that he suggested a shift to 12 month monitoring intervals (as annual schedules tend to work well, and he would never recommend anything less frequent)

along with reactive visits as required, but Staff Member E declined and preferred to stick with biannual monitoring. Mr McHugh says that Staff Member E said that he would raise the suggestion with TCC, but Mr McHugh did not hear back from him.

[263] In late 2024, Staff Member E contacted Mr McHugh to request an Avalon monitoring report. Mr McHugh says that as at that time he was looking to semi-retire, he suggested to Staff Member E that TCC could engage the firm HD Geo, as the principals of that firm were well known to him, and the two firms had collaborated on previous work projects. As a result of that introduction in December 2024 Staff Member E and HD Geo Staff Member A HD Geo Staff Member A made arrangements to meet via a Teams link. With Staff Member E consent, and by way of handing over the work, Mr McHugh provided HD Geo Staff Member A with a collection of Avalon's previous reports to TCC, along with relevant reporting correspondence.

[264] On 5 December 2024, HD Geo Staff Member A sent an email to Mr McHugh, stating:

> Thanks for taking the time last week to run me through the work you have completed at the Mount over the years and getting us involved to continue the work moving forwards.
>
> I am just seeing if you have any luck seeing when TCC will be available for a Teams meeting so we can narrow down what they require and expectations etc so we can put a more detailed proposal together for them. We would be more than happy to travel over to TCC to have an in person meeting with them to discuss. I think it would be great if you were involved with these initial meetings so there is a warm handover.

[265] On 9 December 2024 Mr McHugh sent an email to HD Geo Staff Member A to which he attached .zip files containing a number of Avalon's Mauao reports, and letters. He said:

> Hi HD Geo Staff Member A and TCC Staff Member E is keen to have a Teams meeting. I'm just waiting on him to come back to me with [a] day and time - I proposed Thursday pm or Friday am and just waiting for him to get back.
>
> He cleared me to send you previous work so please find attached. There's a lot of information there so I'd suggest in the first instance have a scan through the 'detailed reports'.
>
> I'll look forward to talking again soon.

[266] In late 2024 – early 2025, Staff Member E arranged for TCC to engage HD Geo to take over the geotechnical monitoring role previously undertaken by Avalon. On 19 March 2025, HD Geo and TCC entered into an Agreement for Provision of Physical Service to TCC, *TC99/25 Mauao Rock Stability Monitoring 24/25 - 26/27.* The services to be 'supplied' by HD Geo pursuant to the agreement were described as:

> The Supplier is to provide ongoing rockfall and land instability monitoring on the Mauao Historic Reserve including reporting on results, key findings and recommendations for preventative and safety measures.
>
> The Supplier will also provide any urgent inspections required due to a storm, earthquake or reported rockfall instability.

[267] In a section of the agreement titled *Services Specification and Standards* it provided:

> PART A: SERVICES SPECIFICATION
>
> Perform a Desktop Study
>
> The Supplier is to understand the history of Mauao and where the hotspots for rockfall and instability [are] located.
>
> This will include:
>
> - review the previous reports and work completed by Avalon Industrial,
> - create a rockfall/landslide register,
> - compile the site locations and features on QGIS.
>
> Conduct an Initial Inspection Early 2025 (March)[165]
>
> The Supplier will carry out an initial inspection conducted with Avalon Industrial to:
>
> - walk the tracks on Mauao,
> - visually inspect the most at-risk areas from rockfall and landslides,

[165] Following the initial inspection to be undertaken in March 2025, the Agreement provided that HD Geo would conduct further similar inspections in June 2025; the end of 2025/start of 2026; and the end of 2026/start of 2027.

- complete a drone fly-over of Mauao,

- summarise the inspection, key findings and any recommendations in a report to the Council's Representative.[166]

….

[268] Having introduced HD Geo to TCC, Mr McHugh facilitated the handover by meeting with them and briefing them on the reports he had provided, and his knowledge of the mountain gathered over the 20 years that Avalon had been reporting to TCC. The handover process included two walkover site visits to the mountain by Mr McHugh and HD Geo representatives. Staff Member E took part on one of these site walkover visits. During a site visit on 2 May 2025 attended by HD Geo Staff Member B and HD Geo Staff Member A of HD Geo, Mr McHugh of Avalon, and Staff Member E HD Geo says that there was discussion about the campground and a recent small slope failure there and that Staff Member E said that WSP had already reviewed the slope failure in the campground and that no further action was required by HD Geo. HD Geo says that this confirmed that its scope was limited to Mauao and its tracks, and that TCC did not require HD Geo to duplicate WSP's work. Furthermore HD Geo notes that it was not provided with a copy of WSP's 1 December 2023 report in relation to the natural hazard risk assessment for the Holiday Park.

[269] HD Geo's report dated 6 June 2025 was its first report to TCC,[167] and was emailed to Staff Member E. In the introduction HD Geo noted:

> Tauranga City Council (TCC) have engaged us to undertake regular monitoring and provide engineering geology consultancy services for the tracks and related assets at Mauao, Mount Maunganui in Tauranga (The Site).
>
> Avalon Industrial Services Ltd have previously supplied this service to TCC from 2003 to 2024, providing regular monitoring, rockfall removal and consultancy services regarding geohazard risks.
>
> This report presents the results of our desk study and recent site visit. The purpose of this package of work was to create a geohazard register (from the results of our desktop study and site visit) and complete a geohazard risk assessment for the site based on the results of our recent site visit.

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166 The Agreement specified Staff Member E as being the Council's Representative.
167 Doc 0013.

[270] HD Geo referenced previous geotechnical reports prepared by: Dr Laurie Richards (1999); Avalon (2003-2024); Terrane Consultants Ltd (2009); and WSP (16 November 2022).

[271] As HD Geo had noted in its introduction, the scope and focus of its work was the tracks and assets on the mountain. In a section of its report headed *Geotechnical assessment* it noted: [168]

> We have identified the tracks and assets [that] are at risk from landslides and rockfall through the following failure mechanisms and triggers, summarised in Table 3 below.

[272] Attached to the report was a schedule (*Mauao Geohazard Register*) on which 101 geohazards are listed with a brief description and relevant details. Items 001 and 002 refer to historic landslide features located on the slopes directly above the campground:

> 001 Relevant asset: TCC Campground. Event occurrence date: Unknown. Geohazard type :Landslide . Event Description: Large historical landslide features above campground – event unknown, approx. 46m wide x 71 m long x 4m deep. Volume: estimated 13000m^3, Possible trigger event: Unknown. Source of information: Historical features.

> 002 Relevant asset: TCC Campground. Event occurrence date: Unknown. Geohazard type: Landslide. Event Description: Large historical landslide features above campground – event unknown, approx. 40m wide x 50m long x 4m deep. Volume: estimated 8000m^3, Possible trigger event: Unknown. Source of information: Historical features.

[273] The location of each of the 101 geohazards on the register was identified and marked on aerial photograph of Mauao attached as an appendix to HD Geo's report.

[274] In Table 3 the report referred to two types of landslide: Shallow transitional or semi-rotational slide, and *Reactivation of landslide debris from historical landslide failures.* The first item in HD Geo's list of *triggers* of landslides is : *intense /prolonged rainfall.* In the description of landslides the report noted:[169]

> Landslide movement typically of topsoil/colluvium/uncontrolled fill soils on volcanic ash /weathered residual soil/shallow rhyolitic rock.

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168 HD Geo report 6 June 2005, page 19.
169 At page 19.

> Landslide events range from very small to large sized landslides above and below several tracks and assets.
>
> These landslide types typically occur on moderately steep to very steep slopes (26 degree[s] to 45 degrees) or where new groundwater springs occur.

[275] In a section headed: *Likelihood* the report noted:[170]

> The majority of recorded landslide events have been triggered by intense/prolonged rainfall events. As landslides are more likely to be triggered by a large rainfall event than by earthquakes, we have considered a reduced likelihood in relation to track users/risk to life because it is less likely that there will be track users present in heavy rainfall.

[276] In a paragraph which addressed both rockfall and landslide consequences, the report said:[171]

> The consequence for a rockfall hitting an individual track user is major, as serious harm or fatality is likely. The consequence for a rockfall hitting a track or asset is generally insignificant to minor, generally causing minor damage that is easily repairable by maintenance workers. The consequence of a rockfall within the campground is increased, as large boulders could cause major damage to permanent cabins or campers.
>
> The consequence for a landslide hitting an individual track user will be dependent on the landslide size and speed. Most of the landslides identified at the site [sic]. Translational or debris flows, are generally faster slope movements. A track user is still unlikely to be caught in a landslide; a track user is likely to be able to see and hear a landslide and remove themselves out of the landslide impact path (take evasive action).

[277] Under a heading *Discussion* the report stated:

> The risk assessment identified sections of the campground at high risk of rockfall that could impact TCC campground assets and users such as cabins and campers.
>
> The sections of tracks at increased rockfall risk are generally below exposed bluffs across the north-western and eastern sides, and below steep slopes covered by boulders in the east. These areas have the highest recorded events and have obvious sources and failure mechanisms present.
>
> Where low to moderate risk have been assessed for tracks/assets, there are still geohazards present that could occur during a triggering even, but we have estimated a lower risk based on several qualitative factors such as less popular tracks, the geomorphology/typography. And the number of recorded events.

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170 At page 21
171 At page 21.

> Our assessment generally aligns with the 2006 Avalon rockfall risk assessment which highlighted an intolerable risk to track users from rockfall hazards for the Te Ara Oruahine, Te Ara Waikorire, and Te Ara Tutanga tacks and the campground.
>
> Our assessment also generally aligns with the WSP, 2022 risk assessment for the Te Ara Tutanga (base track) being 'medium' risk to the track asset from landslides. The section of track WSP identified as high risk to the track, we assessed as moderate risk to the track.
>
> To mitigate the landslide and rockfall hazards, we have provided some risk management strategies outlined in Table 5 below.

[278] In Table 4 titled: *Semi-quantitative geohazard risk assessment,* HD Geo noted 2 previous recorded landslide events and 6 previous recorded rockfall events affecting the campground. Although, and in accordance with the Agreement for Provision of Physical Services to TCC, the report was principally directed at rockfall and land instability on the *Mauao Historic Reserve,* it also included the campground in its list of Mauao tracks and TCC assets at risk of landslides and rockfall. In relation to the campground and as regards *risk to life/users,* the report noted that the likelihood of landslides was *Possible,* the consequence *Medium, and* the qualitative risk to *life/track users, Moderate.* As regards the risk of rockfall to the campground, the report assessed the likelihood as *Possible*, the consequence as *Major,* and the qualitative *risk to life/track user,* as *High*. In the section titled: *Geohazard risk management options,* the report stated:[172]

> Based on the desk study and site investigation, we have identified geohazards including landslides and rockfall on Mauao with varying risk levels to the track, assets, and track users. TCC require risk management options to mitigate the identified geohazards over the short and long term. The risk management options are described in Table 5 below.

[279] In Table 5 HD Geo divide the landslides/rockfall risk management options into two categories: *Passive* risk management for Low to Moderate risk, and *Active* risk management for high to very high risk. Setting out the risk management options for passive risk management for low to moderate risk, the report said:[173]

> Where there is Low to Moderate risk, TCC can implement some controls to manage or reduce the risk level: These controls could include:
>
> **Regular inspections**

[172] At page 25
[173] At page 25

- TCC Mauao rangers maintain regular visual inspections and update the geo hazard register.

- Warning signs and communication to make track users aware of the geohazards present.

- Every 6 months or after significant rainfall or seismic events, HD Geo should complete a site walkover and inspect the geohazards at Mauao and update the register.

- Continued EDM survey monitoring of Avalon identified ‘at risk’ rockfall hazards.

TARP

- **A Trigger Action Response Plan (TARP) could be developed relating to heavy rainfall** or seismic events. This might result in temporary track closures during and following periods of high rainfall or seismic events. (emphasis added)

Maintenance /minor physical works

- …….

Active risk management for high to very high risk

Where there is a high to very high risk, TCC should consider controls such as completing an updated detailed risk assessment (in accordance with the NHRA guidelines) or physical works to reduce the risk to an acceptable level:

These controls could include:

Detailed risk assessment

- undertake a detailed Part 3 NHRA risk assessment to assess the quantitative risk to the track, user and **campground**. (emphasis added)

- the results of this assessment will justify the level of mitigation required to reduce the risk to acceptable levels.

…….

[280] The HD Geo report concluded with the following recommendations:

Recommendations

The following recommendations are based on the desk study and risk assessment.

> We recommend that an updated **landslide and rockfall** risk assessment is completed for sections (as shown on drawing HD3639-108-R1 in Appendix C) of the Te Ara Tutanga (base track), **campground,**[174] Te Ara O Tutauaroa (Goat track) track, Te Ara Oruahine track, and Te Ara Waikorire track using the latest GNS Science Natural Hazard Risk Analysis (NHRA) guidance. The guidance has been adopted by the Department of Conservation for managing geohazards impacting their assets. An updated risk assessment is needed for the following reason[s]:
>
> - There has been no detailed **landslide or rockfall** risk assessment for the last 20 years.
> - Since 1999, there have been at least 101 recorded **landslide or rockfall** events across Mauao.
> - The visitor numbers for Mauao are increasing annually and are currently 1.3 million as of 2024. The increase in track visitors increases the exposure (i.e. the likelihood of a person being impacted by a geohazard)
> - There are permanent cabin structures within the campground that are within the rockfall run out zone (based on observations from the blasting activities in 2003).
> - To understand the actual risk to track users and assets from landslides and rockfalls on higher risk track sections.
> - To determine if active risk management of the hazard is required and what type of preventative control is deemed suitable.
>
> For tracks with a low to moderate risk of landslides or rockfall hazard, there is still a marginal risk based on topography and geology, however, we assess that these tracks could be managed using passive risk management controls described in Table 5.
>
> ……
>
> (emphasis added)

TCC undergoes organisational restructuring impacting the Holiday Park

[281] TCC underwent some major organisational restructuring in early-mid 2025 which involved multiple changes of personnel responsibilities. Staff Member AP 's position in the Spaces and Places team with responsibility for supervising management of the Holiday Park was disestablished. Staff Member AP Staff Member AP Staff Member AP , and had direct responsibility for the Holiday Park for the two and a half

years prior to May 2025 when his employment at TCC ceased (a month prior to the HD Geo report being received). Staff Member AP's responsibilities for the Holiday Park were initially taken over by Staff Member P. As part of the Reset (restructure), it was proposed that Staff Member P would assume the responsibilities previously held by Staff Member AP, with TCC thereby effectively combining the two positions into one. According to the Reset documentation these changes were to take effect from 1 July 2025. Staff Member T was the Staff Member T throughout this process of organisational restructuring and she reported to the Staff Member BC Staff Member BC.

[282] Staff Member AB commenced employment with TCC in August 2023. Between then and July 2025 TCC went through two restructures, and two restructure-like processes called "Reset One" and "Reset Two". As a result of Reset Two, Staff Member AB Staff Member AB's role changed and she became Staff Member AB Staff Member AB. On 16 July 2025, Staff Member AB was notified of a further restructuring under which she was to have responsibility for supervision and oversight of the Holiday Park campground, with Staff Member Q Staff Member Q reporting to her. Her manager, Staff Member T, has explained that the rationale for moving the Holiday Park from the Assets team to the Community Engagements team was to drive and improve customer relationships, and that as aspects of this position would be new to Staff Member AB, she was to receive support in connection with asset management aspects of the role.

[283] Staff Member AB whose TCC work responsibilities were focussed on community liaison and communications, and whose employment background and qualifications were in the field of journalism, public relations and communications, initially questioned her suitability for this role as she had no experience in asset management. She was asked to prepare a memo setting out the pros and cons of her holding the position, which involved moving the Holiday Park from the TCC Spaces and Places Assets team where it had been, into her Staff Member AB Staff Member AB team. Staff Member AB says that despite identifying her need for asset management support, her appointment and the change of responsibilities was confirmed by the Chief Executive effective 18 August 2025.

[284] As a result of this change, a number of Staff Member P's direct reports and associated management responsibilities were transferred to Staff Member AB. By this time Staff Member AP had already departed TCC, and responsibility for oversight of the Holiday Park had passed to Staff Member P with Staff Member Q reporting to him. Neither Staff Member P nor Staff Member AB received any kind of handover briefing before assuming responsibility for the Holiday Park.

[285] On 18 July 2025, about a month before commencing her new role, Staff Member AB Staff Member AB arranged a meeting with Staff Member Q to introduce herself. During this first meeting Staff Member Q told her about the problem with flooding over the ocean-side campsites. On 30 July 2025 after heavy rain, Staff Member AB contacted Staff Member Q to ask if there had been any flooding and Staff Member Q sent her some photographs of flooding over the campsites. Later that day Staff Member AB sent her manager, Staff Member T, a Teams message. She said:

> If its ok I'll start bringing you more in the loop with the Beachside stuff (just as FYI). Want Staff Member Q to feel more connected. I rang him this morning to see if he was ok overnight with all this rain and he was out there with a shovel helping to move the flooding around.

[286] In August 2025 Staff Member AB set up a planning workshop meeting to be held in September 2025. She invited Managers from Planning and Assets as well as Asset advisors and a Project Manager who had previously done work at the Holiday Park. On 16 August, two days before she was due to start her new role and take over management of the Holiday Park, Staff Member AB had a meeting with Staff Member BC Staff Member BC.[175] Staff Member AB says that during the meeting, Staff Member BC congratulated her on her appointment to the new position, with words to the effect: *congratulations, you now have a holiday park.* Staff Member AB says Staff Member BC told her that the Holiday Park: *… basically just completely runs itself. If you go down there once or twice, like in total, that's all it will need.* Staff Member Q *'s run it for 20 years. You won't need to.* However, Staff Member BC has a different recollection of this conversation, and says that while she would not have told Staff Member AB that she didn't have to do what her new role had made her responsible to do, she nevertheless accepts that she may well have reassured Staff Member AB by telling her that Staff Member Q was a

[175] Staff Member BC was the Staff Member BC. Staff Member AB reported to Staff Member T, who in turn reported to Staff Member BC.

"good operator". These differing recollections of the conversation are of little significance in the context of this review, and I simply note and record them. Irrespective of what was said, as her actions just described demonstrate, Staff Member AB Staff Member AB had already actively set about her new responsibilities by familiarising herself with the Holiday Park and its operation and making plans for its future development.

TCC staff circulate and discuss the HD Geo report of 6 June 2025

[287] On 29 August 2025 Staff Member E sent Staff Member Q an email and a TCC 'Objective" link to the HD Geo report.[176]

[288] On 5 September 2025 Staff Member Q sent Staff Member AB an email and a copy of the HD Geo report, which he said he wanted to discuss with her at their next catch-up. They also had a brief telephone conversation that day about the report. Staff Member Q told her that Staff Member E had sent it to him, and it would be good to discuss it. Staff Member AB Staff Member AB says she read the report and from it noted that rockfall was the significant risk, and that while landslides were also discussed in the report they were assessed as being at a lower level of risk.

[289] On 8 September 2025 Staff Member AB received an email attaching a Qualmark Evaluation Report. This advised that the Beachside Holiday Park had been evaluated as at 27 August 2025 and had received a Gold Qualmark Award, and had maintained its 4 Star Plus Holiday Park grading. Staff Member AB says that she read the Qualmark report as confirming that the Holiday Park was meeting best practice standards in terms of risk management and mitigation as well as emergency management systems. The report sets out Qualmark's evaluation and comments regarding a number of criteria: Business systems; Health & Safety; Environment; People; Community & Culture. In Health and Safety section the report notes inter alia that:

> The park demonstrates a proactive approach to hazard identification and risk management, supported by a well maintained hazard register and risk assessment documentation.

[176] Objective being the name of the TCC electronic data filing system.

[290] On 10 September 2025, Staff Member AB and Staff Member Q met at a 'work in progress' meeting. Staff Member E also attended. During the meeting they discussed the HD Geo report. Staff Member AB says that during their meeting concern was expressed regarding who would be paying for another HD Geo report and what the implications of getting another report could be. Staff Member AB and Staff Member E have differing recollections regarding this conversation, but their respective accounts are nevertheless generally to the same effect. Staff Member AB recalls that Staff Member E commented that iwi would not allow any mitigation measures that involved the erection of wire netting fences to catch rocks on Mauao. Staff Member E says that he referred to the cultural and archaeological nature of the site, and that any proposal involving the erection of large structures on the historic reserve may prove to be difficult as it would need iwi and Heritage NZ approval. Staff Member AB says that Staff Member E said that he would get another report done for Mauao, but that he might use Tonkin & Taylor for it. Staff Member AB recalls that she said that the campground would absolutely get another report done as recommended, and that she would ask Staff Member T Staff Member T for the OPEX funding to enable it to be done. Staff Member AB says that she asked whether the others thought that TCC should combine the campground and mountain reports, and that Staff Member E said it would be better to do them separately because the historic reserve and the campground are fundamentally different and operate accordingly. Later that day Staff Member AB says she spoke to Staff Member T about needing to get another geotechnical report based on recommendations in the HD Geo report she had received from Staff Member E, and that Staff Member T told her to contact Staff Member BJ Staff Member BJ, who had experience with geotechnical reports.

[291] On 11 September 2025 Staff Member AB sent an email to Staff Member BJ with the HD Geo report attached. She asked for his feedback on the report suggested that Tonkin & Taylor could be engaged, and asked for his recommendation regarding the engagement of a geotechnical consultant to undertake a follow-up assessment. Staff Member BJ Staff Member BJ responded the following day advising that he and his team had previously used Tonkin & Taylor and were comfortable with them. He said that Staff Member E had also contacted him to ask for Tonkin & Taylor's contact details. Staff Member BJ also asked her whether there was any reason for wanting to steer away from HD Geo who had

prepared the report. Staff Member AB replied suggesting that they should meet in person to discuss the matter.

[292] On 12 September 2025, Staff Member AB hosted the planning workshop that she had organised. Among those attending were: Staff Member T, Staff Member P, Staff Member Q, Staff Member BL, Staff Member BM, Staff Member BK, and Staff Member BJ. Staff Member AB says that during the meeting she raised the HD Geo report, and that there was discussion around whether a further follow-up report could be looked at as part of a wider Holiday Park master plan, or should be done separately. Staff Member AB Staff Member AB says that she provided printed copies of the HD Geo report and her campground masterplan document to those present. She says that Staff Member BJ commented on the suggestion of using Tonkin & Taylor for the follow-up reports and said that this would be 'in their wheelhouse'. Staff Member T arrived at a later stage of the meeting as she had been required to attend another TCC meeting first. By the time Staff Member T Staff Member T arrived, Staff Member P and Staff Member BL had already left the meeting. Staff Member P Staff Member P says that while he was present, he does not recall there being any discussion regarding a geotechnical report, or any copies of a geotechnical report being distributed. At that time Staff Member P had not seen or been provided with a copy of the HD Geo report. Staff Member T says that the HD Geo report was not discussed during the part of the meeting she attended, and all that was discussed was the general master plan for the Holiday Park.

[293] One of the other topics discussed at the meeting was a Bid Card that Staff Member AB Staff Member AB had found that had been prepared before she became involved in the campground. It sought TCC funding for the cost of developing a masterplan for the future development and operation of the Holiday Park. It also sought funding for the costs of designing and constructing a new access road on the ocean beach side of the campground. That Bid Card said that in preparing a master plan for the campground they would need to consider "[w]here hazards may be present in the sloping topography that may affect development."

[294] Staff Member AB says that following the 12 September 2025 meeting, and as a result of discussions she had with Staff Member E, Staff Member Q and Staff Member T, it was agreed to proceed with the HD Geo recommendations and obtain another report, as well as

monitoring. On 16 September 2025 Staff Member AB says she had a regular work in progress meeting with Staff Member T and told her about her decision to proceed with following up the HD Geo recommendations. She recalls asking Staff Member T to arrange OPEX funding so that she could engage Tonkin & Taylor to prepare a follow-up report, and that Staff Member T's response was to ask her why she would do that, and that Staff Member E would be better suited to be doing it having regard to his position and his considerable experience with Mauao-related matters. Staff Member T told Staff Member AB that she did not want two separate reports done, and said that she would speak to Staff Member P Staff Member P to get Staff Member E to get the report, and to ask Staff Member P to then get back to her.

[295] On 2 October 2025, Staff Member P sent an email to Staff Member Q, and copied it to Staff Member E, and Staff Member AB. He said:

> Subject: Landslide and Rock Fall Risk Assessment
>
> Hi SM Q,
>
> I hope you're doing well.
>
> I'm reaching out to request a GL code to cover the cost of a rock fall risk assessment for Mt Camp Ground. Since SM E had one completed for Mauao and suggested a similar assessment for the camp ground be carried out, this suggestion has come full circle and landed back with us, as SM T has asked my team to complete this for you.
>
> Please be aware that any report SM E prepares on your behalf may identify risks beyond your control, which could potentially lead to obligations such as removing cabins or other structures. It's important to keep these implications in mind before proceeding. As an example, I understand the 1999 report highlighted that caravan sites near steep slopes in the camp ground are at risk of landslide and rockfall, though no significant actions appear to have been taken to address this.
>
> I suggest setting up a meeting with you, SM AB and SM E to discuss potential outcomes and actions before SM E initiates the report. Can I leave it with you to arrange this?
>
> Regards,

[296] Staff Member E says that having received this email he spoke to Staff Member P and "verbally protested [the] decision" requiring him to obtain *a rockfall risk assessment* for the high-risk areas of the campground, saying that this blurred the lines

of responsibility between the Historic Reserve and the campground. Staff Member E says that he believed that there was no precedent for this approach and that there was a long history of the two reserves being run differently, with independent assessments obtained for their own specific risk profiles and user groups, but that despite his objection, Staff Member P instructed him that he was required to arrange the assessment. Staff Member E says that from the email he understood that he was only undertaking the rockfall risk assessment, and if more than that was intended, that was not clearly communicated to him.

[297] Staff Member P says that it is his recollection that Staff Member E verbally expressed his frustration at having to take on additional work because of the effect it would have on his workload generally, and because undertaking the task of obtaining the assessment blurred the boundary lines of the responsibilities of his role, rather than having a substantive objection to the scope, or the obtaining of the assessment. Staff Member P Staff Member P says that he understood that the basis of Staff Member T's direction that the task of obtaining the assessment report be allocated to Staff Member E was because of his role and expertise as regards Mauao, and because as the hazard originated on the slopes on Mauao above the campground it could not sensibly be assessed in isolation from the campground, and recognising that it was the hazard itself that crossed the boundary, rather than "blurring" it.

[298] Referring to his 2 October email, Staff Member P points out that his subject line referred to a *Landslide and Rock Fall Risk Assessment,* which he says was intended to clearly show that the assessment contemplated was not confined to rockfall. And he says that his email notes that the direction for obtaining the assessment had been made by Staff Member T. Staff Member P further notes that his email to Staff Member Q expressly contemplated that Staff Member E would obtain the report. And he says that rather than constraining the scope of the proposed assessment report in any way, he had warned that a report might identify risks beyond Staff Member Q control which could potentially lead to obligations such as the removal of cabins and other structures, and he had urged a meeting to discuss the potential outcomes *before* Staff Member E initiated obtaining the report. Staff Member P says that he certainly did not intend his email to convey that there should be a narrow or constrained assessment sought as regards the report to be obtained. He says that his reference to the 1999 report was based on

information he had previously received (he thinks from Staff Member E), and being told that an earlier report had made recommendations on which no action had been taken. He says that by raising the issue, he intended that the campground team would review any such previous recommendations and determine the way forward, however he received no response to his email.

[299] On 7 October 2025 HD Geo Staff Member B of HD Geo sent an email to Staff Member E (copied to HD Geo Staff Member A at HD Geo) attaching an HD Geo geohazard monitoring report following a site visit to the mountain on 1 October.[177] The report recorded that the site visit had taken place on 1 October 2025, and that present were, HD Geo Staff Member B, Neil McHugh (Avalon), and Staff Member E (TCC).[178] The report noted and described the *Inspection scope* as:

- Visual inspection of Mauao geohazard features by engineering geologist
- Drone photogrammetry of the bluffs
- Review recorded information by Tauranga City Council
- Update natural hazard maps, register and risk assessment
- Provide preliminary remedial options and /or recommendations as needed

[300] HD Geo's 7 October 2025 monitoring report noted the areas that had been inspected including the Base Track, the 4WD track, the Staircase track, the ocean 4x4 track, the Goat track, the Summit, and the Campground. The report noted and included photographs of a comparatively small slip in the campground on the steep bank beside the cabin on H72 which had occurred since its previous inspection. HD Geo noted that it had been inspected by WSP, that it was to be managed by the campground, and that HD Geo would update the geohazard register. The report concluded with several recommendations, including:

> Implement the TARP[179] during heavy rainfall/flood events for high risk zones (Te Ara Waikorire and Te Ara Oruahine, Te Ara Tutanga tracks).

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177 Doc 265251.
178 Doc 265252.
179 HD Geo had assumed that TCC already had a TARP in place for Mauao. However, it did not.

Staff Member AB, Staff Member Q, *and* Staff Member E *meet – 15 October 2025*

[301] On 15 October 2025, Staff Member AB says she met with Staff Member Q and Staff Member E and they all agreed to go ahead with getting a follow-up geotechnical report for the campground regardless of the implications, with Staff Member E saying that they would stay with HD Geo for the report. Staff Member AB says that the consensus was that they would deal with any impacts of the report when they knew what they were, and that they wanted to address the risk and concerns that had been raised in the HD Geo report, and that the campground would pay for it. Staff Member E says that from this conversation he had a different understanding. He says that what was agreed was that they would go ahead with obtaining a *rockfall risk assessment* regardless of the implications, and that TCC would stay with HD Geo as regards a *rockfall risk assessment*. This divergent understanding is significant as Staff Member E says it informed his subsequent approach and dealings with HD Geo.

[302] On 4 November 2025 Staff Member E sent an email to HD Geo Staff Members A and B at HD Geo, with the subject: *Mount Campground – Maunganui* stating:[180]

> Kia ora team,
>
> I have been asked to undertake the recommended assessment for within the campground.
>
> Are you please able [to] provide a quote to undertake the recommended assessment that came from your initial Mauao report. As well as ongoing monitoring that will align with the Mauao monitoring that we have planned.
>
> Please be aware that we are looking for a practical report as there are large limitations of what can be achieved or changed in the campground as well as having the same underlying archaeological nature as Mauao.
>
> Nga mihi

[303] Shortly after receiving this email HD Geo SM B telephoned Staff Member E. A summary of HD Geo Staff Member B account of this telephone conversation with Staff Member E has been provided to me by HD Geo. HD Geo Staff Member B recalls that Staff Member E said that the "TCC Board" wanted to know more about the geohazard risk in relation to the campground

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[180] Email 4 November 2025 (08:58am) Staff Member E to HD Geo Staff Members A and B

and had requested a quote for a detailed risk assessment. He says he told Staff Member E that HD Geo could provide a quote, and that Staff Member E should be aware that it was likely to come back as high risk with mitigation measures required, as previously assessed by Avalon. He says that Staff Member E said that due to archaeological, ecological and financial constraints, any mitigation measures for an assessed high-risk hazard would be less likely to be undertaken by TCC. That being the case, HD Geo SM B noted that a more practical approach would be for HD Geo to include the campground within its geohazard monitoring, which up until then had only included the Mauao tracks. HD Geo Staff Member B says he proposed that the geohazard monitoring would be done every six months, and after any heavy rainfall or seismic events. He explained that the monitoring would identify any new or existing geohazards that showed signs of instability. If instability was identified, HD Geo would flag the identified risk immediately to Staff Member E at which point depending on the risk to life, HD Geo might recommend that the closure of a track or the campground be implemented with either mitigation measures to be undertaken, or a detailed risk assessment required before reopening. HD Geo Staff Member B says he asked if there was a Trigger Action Response Plan (TARP) in place, and was told by Staff Member E that there wasn't, either for rockfall or landslides. HD Geo Staff Member says he recommended to Staff Member E that HD Geo create a TARP for Mauao and the campground which covered geohazards, and that Staff Member E agreed.

[304] Staff Member E does not agree that he simply said that mitigation measures for an assessed high risk hazard were less likely to be taken. He says that he commented that any measure which could be achieved in the short-term would be helpful, as any measures which required more extensive measures would take time to move through the consenting process. He says however, that his recollection of the phone call is that the discussion was mainly about getting a TARP for Mauao, which he agreed with HD Geo Staff Member B would be appropriate. As regards a TARP for the campground, Staff Member E says that HD Geo Staff Member B said he would cover that in an email and that was the email he subsequently received from HD Geo SM B and sent to Staff Member AB.

[305] Following their telephone conversation HD Geo SM B sent an email to Staff Member E in which he confirmed that HD Geo was currently including the eastern summit bluff and eastern slopes of Mauao above the campground in its monitoring inspections, and recommended that it officially include the campground in its monitoring inspections.

He also recommended that it create a TARP for Mauao and the campground. This email with the subject: *Mount Campground – Maunganui*, is set out in full below: [181]

> Morning Staff Member E
>
> **Campground**
>
> As discussed on the phone, we currently include Mauao eastern summit bluff and the eastern slopes above the campground in our monitoring inspections.
>
> We would recommend that as part of our current monitoring inspections, we now officially include the campground. This also includes any geohazards within the campground recorded by the campground management [that] are sent to us.
>
> If during our monitoring programme, we identify any geohazards with elevated risk to the campground, we will communicate this risk to you. Depending on the immediate risk level we will depend on the recommendation action (such as increased monitoring, detailed natural hazard assessment, remedial works).
>
> **TARP**
>
> We can help create a trigger action response plan (TARP) specific for identified geohazards at Mauao. If you have any existing TARPs for natural hazards, please send them over and we can work with you to update them. The TARP should also include the campground.
>
> Any TARP works would be a variation to our current contract, and we would complete the works at time and cost rate, same rates that are applied in the contract.
>
> **Rockfall on 4 WD track**
>
> Also please send over that picture of the rockfall on 4 WD track to me, please.
>
> Cheers,
>
> HD Geo Staff Member B

[306] HD Geo says that TCC never responded to HD Geo Staff Member B email, and that it was never instructed to include the campground in its monitoring programme nor to create a TARP for Mauao or for the campground.

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[181] Email 4 November 2025 (09:45am) HD Geo Staff Member B to Staff Member E (cc HD Geo Staff Member A)

[307] On 11 November 2025, Staff Member AB saw Staff Member E and asked him for an update on progress. She says that he told her that he had actioned obtaining a report from HD Geo and that monitoring would start in February. Staff Member E has a different recollection. He says that he told Staff Member AB that he had actioned the obtaining of a *rockfall risk assessment* from HD Geo, and that their recommendations had changed from undertaking the *rockfall risk assessment* to undertaking regular monitoring, and then doing specific assessments if issues were found during monitoring. Later that morning, Staff Member E forwarded a copy of his 4 November email to HD Geo and HD Geo Staff Member B reply, to Staff Member AB. Apart from the subject line: *Mount Campground – Maunganui* there was no other message or content.[182] On 12 November 2025, Staff Member AB forwarded Staff Member E's email of 11 November to Staff Member T and said that she wanted to talk to her about it at their next catch up. SM AB Staff Member AB says that subsequently she would have discussed Staff Member E email with Staff Member T, but says she cannot recall when or where she did. Staff Member T says that her understanding from the exchange of emails between Staff Member E and HD Geo's HD Geo Staff Member B was that while Staff Member E had initially requested a follow-up report, HD Geo had suggested that it was unnecessary given the proposed monitoring, but had recommended that a TARP be prepared for the campground.

[308] From the exchange of emails with HD Geo that Staff Member E sent her, Staff Member AB Staff Member AB understood that as had been decided between Staff Member E, Staff Member Q and herself at their meeting on 15 October, and as Staff Member E in his email of 4 November 2025 to HD Geo's HD Geo Staff Member B had himself confirmed, he was dealing with the matter of obtaining a report from HD Geo following up and putting in place the recommendations they had made in their 6 June 2025 report. So far as she was concerned, the matter had been left in Staff Member E's hands to deal with, and from that time on, she says it was her understanding that Staff Member E had already instructed HD Geo to undertake the preparation of a follow-up report, and HD Geo's geotechnical monitoring was to include the campground, and she was waiting to hear from him on further progress.

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182 Email 11 November 2025 (10:21am), Staff Member E to Staff Member AB.

[309] For his part, Staff Member E says that although he accepts that he had been given responsibility for obtaining a report from HD Geo, when he sent his 11 November 2025 email to Staff Member AB in which he forwarded the 4 November emails, he considered that by doing so, he had passed the matter over to her and that his responsibilities in relation to the matter were at an end. He says that it was his understanding that by this stage he had completed the task he had been given of organising for HD Geo to undertake a *rock fall risk assessment* for the high-risk area, and that HD Geo would now be undertaking regular monitoring instead. He says he passed this information to Staff Member AB during their conversation on 11 November 2025, and by forwarding her the HD Geo email that same day.

The TCC Risk Management Policy 2025

[310] TCC had a risk management policy which was first adopted in 2014, and was regularly revised and amended. As at the date of the 22 January 2026 landslide, the latest version was the *Risk Management Policy 2025.* The purpose is set out below:

> This policy aims to ensure Tauranga City Council undertakes effective risk and opportunity management by:
>
> - setting Tauranga City Council's commitment to risk management and business continuity
> - establishing a framework to deliver a consistent approach to risk management
> - clarifying risk management roles and responsibilities across the organisation
> - providing assurance that risks are being appropriately addressed and managed.

[311] Under the heading Policy Statement the policy records:

> 5.1.1 Tauranga City Council is committed to embedding risk and opportunity management and business continuity into everyday practice at all levels of the organisation to achieve its objectives.
>
> 5.1.2 Tauranga City Council will promote a culture where all council staff are empowered to own their risks and continuity plans through collaborative engagement.

[312] In a table headed Risk Management Roles and Responsibilities, the policy briefly describes the respective roles of: the Council; the Strategy, Finance and Risk

Committee;[183] the Chief Executive; the Executive Team; Group Managers; the Risk and Assurance Team; Operational managers and leaders; and Council staff.

[313] In a table under the heading: *Risk Recording and Reporting,* the policy provides:

> 5.5.1 Identified risk and opportunity management plans will be documented and recorded in the ERMS.[184] Risk registers will be reviewed by each division regularly.
>
> 5.5.2 This policy covers the following types of risk, which cascade through all levels of Tauranga City Council.

[314] The table divides risks into seven categories: Strategic; Corporate; Operational; Emerging; Business continuity; Project; and Health, Safety & Wellbeing. Strategic risks are to be recorded in the Council's ERMS system with all the relevant corporate risks linked to the appropriate strategic risk. Strategic risks are described as:[185]

> The strategic risks that could impact Tauranga City Council's ability to achieve long-term goals, deliver services, and meet community needs focus on: workforce, service delivery, financial stability, city economy, planning and growth, digital infrastructure, resilience, and governance and reputation.

[315] Corporate risks, being those with TCC wide significance, are to be recorded in the corporate risk register. They are described as being:[186]

> High level risks and opportunities relating to internal or external events which could impact on Tauranga City Council achieving its community outcomes.

[316] Operational risks are also to be recorded in the ERMS or locally as appropriate to the risk. These are described as:[187]

> Risks and opportunities that may impact daily operations and Tauranga City Council's service delivery to the community.

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183 The Strategy, Finance and Risk Committee is referred to in this document as the Audit and Risk Committee.
184 The Enterprise Risk Management System (ERMS) also known as the CAMMS/Riskonnect software solution.
185 Paragraph 5.5.2.
186 Paragraph 5.5.2
187 Paragraph 5.5.2

[317] Emerging risks, being those risks that are "on the radar and could potentially develop but where the impact is not yet fully known", are to be recorded on the risk report to the Audit and Risk Committee.

[318] Health, Safety & Wellbeing risks are to be recorded and managed in 'Vault Damstra' by the Health, Safety & Wellbeing team. These risks are described as being:[188]

> Risks which may cause harm to or impact the health, safety and wellbeing of council staff or contractors when exposed to a hazard.

[319] Depending on their risk rating level (low; moderate; high; critical) the policy provides that risk registers are to be reported to appropriate management levels and are to be reviewed at specified intervals.[189]

The TCC Risk Management Framework

[320] The TCC *Risk Management Framework* was first adopted in April 2023 the "set of references and tools" TCC has adopted to "integrate risk management into all [its] activities in a consistent and standardised way [and] and enable decision-makers to manage their risks and opportunities to make well-informed decisions. The Framework sets out six steps which are collectively described as, *The Engine Room.* They are:[190]

> Step 1 – Identify the risk (*What could possibly go wrong? What might be improved?*)
>
> > This is the process to scan the business and its environment for new and emerging risks and opportunities and to maintain an understanding of existing risks. It includes organisational context, a risk-cause-impact description, categories of risk sources and risk ownership.
>
> Step 2 – Assess the risk (*What is the worst-case scenario? How much benefit could there be?*)
>
> > This step determines how severe the risk could be and is generally assessed on a qualitative judgment by those working in the business. It is also based on quantitative

188 Paragraph 5.5.2
189 Appendix 2 – Risk Reporting and Response Table.
190 Risk Management Framework. Page 8.

descriptors to assess the likelihood and consequence / impact of the risk or opportunity occurring (see Appendices 2 & 3)

Step 3 – Reduce the risk (*How bad, or good, could this be?*)

Step 3 aims to quantify control measures that either reduce the likelihood of a risk occurring or reduce the impact of a risk. It is also important to know how effective those controls are. The more effective a control is, the more confidence you will have that the risk is being managed as expected.

Step 4 – Measure the risk ….

Step 5 – Respond to the risk ….

Step 6 – Review the risk ….

[321] The Framework also describes what are termed the *Three Lines of Defence* which have been adopted as TCC's approach for risk management assurance and governance, to ensure that roles, responsibilities, and accountabilities for decision-making are structured. The three lines of defence are: Business Managers, Risk Management, and Assurance Audit responsibilities. As the first line of defence, business managers are required to:[191]

- Identify, assess, manage, monitor and report risks
- Implement and manage controls and report breaches
- Training and awareness
- Day to day risk management and decision-making.

The second line of defence, termed 'Risk Management' are those activities which:

- Supports 1st line, providing guidance and advice
- Develops the Risk Management Framework
- Monitors adherence to the Risk Management Framework
- Assesses quality of process and control environment, including Business Continuity Plans

[191] Risk Management Framework. Page 11.

The third line of defence are Assurance and Audit Responsibilities, which:

- Provide independent oversight of 1st and 2nd Lines that the Risk Management Framework is operating effectively.

- Review appropriateness, effectiveness and adequacy of the Risk Management Framework.

[322] Under a heading *People & Responsibilities,* the Framework says:[192]

> People are at the heart of council. Every member of staff, contractor, and volunteer plays a part in identifying risks and opportunities, actively managing them within their sphere and scope of work.
>
> Just as council's performance framework 'Our Development Conversations' is focussed on regular and meaningful conversations, so risk conversations lead to an improved and mature risk-aware culture.
>
> Each person has a part to play in risk management and we consider every person is important wherever they work in our organisation. Responsibilities for each of us will differ and depend on the level at which we work. These are set out in the Risk Management Policy.

[323] The Framework describes the audit process and function:[193]

> Internal audit is an independent, objective assurance and consulting activity designed to add value and improve operations. We do this through an integrated and systematic approach to evaluate the effectiveness of risk management, control and governance processes.
>
> In addition to significant risk issues identified, internal audit follows up on recommendations or findings from external audits and reviews, both statutory and ad hoc, to ensure that actions are implemented and reported to the Executive and the SFRC.

[324] The Risk Management Policy and Risk Management Framework together establish a detailed structure and prescriptive process for the assessment and management of risks *once they have been identified,* and once they have been *properly notified and recorded* in their relevant risk register. However effective and comprehensive the TCC risk management "Engine Room" process is, as the fatal landslide on 22 January has shown, the efficacy of the risk management process is entirely dependent on a risk being identified as such, and entered into the risk

192 Page 13.
193 Page 12.

management system where it can be properly assessed, mitigated, and monitored. Step 1 of the Framework is of course essential. In order to be effectively assessed, mitigated, managed and monitored, the risk must be identified with a sufficient degree of specificity, as will enable it to be addressed. Identifying a landslide risk in generic terms as was done in the Holiday Park and Mauao Risk Registers as, "Falling rock/landslides" without any further detail, is not going to enable focussed assessment of the risk and the identification of effective steps to be taken to mitigate, manage and monitor the risk.

[325] The risk of a major landslide entering the campground was known to a succession of TCC staff for over 25 years. Despite TCC adopting the Risk Management Policy in October 2014 and more recently the Risk Management Framework in April 2023, the landslide risk first identified by Dr Richards in 1999, and restated repeatedly by Mr McHugh, the fact that the landslide risk was never addressed and never made its way onto the TCC Spaces and Places risk register, other than in the form of a generic description, demonstrates the presence of a significant weakness embedded within the TCC risk 'management' system. It is a system that relies entirely on a risk being 'notified', so that TCC staff who are capable of subjecting it to a properly informed level of scrutiny can decide how it should be mitigated and managed. If risk notification and reporting does not occur, the risk continues to exist without assessment or monitoring, and no amount of auditing is ever likely to find it.

[326] This inherent weakness in the TCC risk management process can only be overcome, if the notification of the risk by staff who initially receive reports containing a warning of the existence of a risk, is made effectively redundant by means of a standing instruction requiring all geotechnical reports prepared for the Council to be forwarded immediately upon receipt to the senior Manager responsible for that team, with a copy sent to the Manager: Risk and Assurance. I shall address this further in a recommendation to follow.

The Spaces and Places - Beachside Holiday Park - Mauao - Risk Registers

The Beachside Holiday Park Risk Register

[327] The Spaces and Places Beachside Holiday Park risk register includes "Falling rock/Landslide" in the list of hazards, and notes the risk as being: "loss of life, injury, damage to land and loss of natural resources". On a scale of Low; Moderate; High, and Critical, the *Raw Risk* is rated as *Critical* and the *Residual Risk* is rated as ***High.*** The *Role Responsible* for the risk is: Staff Member Q. The initial assessment date given is: 15 August 2016; the Last Assessment 24 July 2023; and the Review Date is 23 April 2024. The *Controls* to mitigate and manage the falling rock/landslide hazard are listed as:

> Implement slope stabilisation measures such as retaining walls, rock bolts, and slope reinforcement where possible
>
> Regular survey of area
>
> Removal of unsafe rocks
>
> First aid kit available
>
> Restricted access of public to hazardous area
>
> Signage
>
> Emergency response plan
>
> Wear hard hat in exposed areas under rockfall/landslides

The Mauao Risk Register

[328] The Spaces and Places Master Risk Register for Mauao contains the same information except for the *Role Responsible* which is: " Advisor: Natural Environment (Mauao)", and the date of the *Initial Assessment* and *Last Assessment* which are dated 20 June 2024 and the Review Date which is dated 20 June 2026.[194] As with the Holiday

[194] This being the date it was due for review.

Park Risk Register the *Raw Risk* is rated as *Critical,* and the *Residual Risk* is rated as ***High.***

[329] The risk registers contain an explanatory statement regarding the *Likelihood* (L) and *Consequence* (C). In both risk registers the ***Raw Risk*** likelihood rating given for the hazard is 3 (*possible*), and the consequence rating is 5 (*Extreme*). The ***Residual Risk*** ratings for both the Holiday Park and Mauao are: *Likelihood* 1, and *Consequence* 5.

[330] A likelihood rating of 1 is given when the likelihood is categorised as *Rare.* Risks at this level are described in the risk register as: *Will only occur in exceptional circumstances. It is a complete surprise.* A consequence rating of 5 is categorised in the risk register as *Extreme.* Risks at this level are described in the risk register as: *Loss of life. Multiple serious injuries, Permanent severe disability.* By applying a chart set out in the risk register, the likelihood and consequence ratings are correlated to determine a risk level of: Low; Moderate; High; or Critical.

[331] The explanatory statement in the risk register sets out a *Risk Escalation Procedure* for each level of hazard depending on whether it is assessed as being: Low, Moderate, High, or Critical. For Hazards assessed as being ***Critical*** risks, the required actions are:

> This level of risk requires Executive level attention. Executive level sign-off is mandatory for risks at this level.
>
> Risk controls need to be developed and may require close attention by senior/executive management to ensure effective controls are identified and implemented.
>
> Risks at this level may require specialist assistance to further treat/reduce risk.
>
> **Escalation**
>
> Immediate notification to Executive Team, Risk Owner & HSW Manager.
>
> 3 monthly review by GM, Risk Owner & HSW Manager.

[332] The *Risk Escalation Procedure* for Hazards assessed as *being* ***High*** risk requires:

This level of risk requires Senior Leadership Group level attention.

Senior Leadership Group level sign-off is mandatory for risks at this level.

Risk controls need to be developed with clear and timely actions identified to reduce the risk.

Senior leadership must maintain close attention to these risks and ensure effective controls are identified and implemented.

Escalation

Notification to relevant Senior Leadership Group member (Tier 3), Risk Owner and HSW Manager.

Yearly review by SLG, Risk Owner, & HSW Manager.

[333] The applicable Risk Escalation Procedure for the ***High*** Residual Risk ratings in the risk registers for both the Holiday Park and Mauao, required compliance with, and notification to the relevant Senior Leadership Group member (Tier 3), the Risk Owner, and the Staff Member BO.

[334] In the case of Spaces and Places the Tier 3 Senior Leadership Group member is Staff Member T. For the Holiday Park, the Risk Owner is Staff Member Q Staff Member Q which is the position held by Staff Member Q. For the Mauao Risk Register, the Risk Owner is: Staff Member E, which is the position held by Staff Member E.

[335] As I read the requirements of these risk registers, the applicable Risk Escalation Procedure for the ***High*** residual risk ratings given to the hazard of landslides, required notification of the risk to Staff Member T as the "relevant Senior Leadership Group member (Tier 3); notification to the Risk Owner (Staff Member Q in the case of the Holiday Park and Staff Member E in the case of Mauao); and also to the SM BO Staff Member BO. These risks required Senior Leadership Group level attention and sign-off. The risk register stipulates that the Senior leadership *must maintain close attention to these risks and ensure effective controls are identified and implemented.* And that: *Risk controls need to be developed with clear and timely actions identified to reduce the risk.* These risks are to be the subject of *Yearly review*

by the Senior Leadership Group member, as well as the Risk Owner and Health, Safety and Wellbeing Manager.

[336] These risk evaluation and escalation procedures, adopt and apply the risk matrix contained in the TCC Risk Management Policy (Appendix 1 and Appendix 2), and the TCC Risk Management Framework (Appendix 4 and Appendix 5).[195]

TCC's Internal Audit Report - Natural Hazards - 2023

[337] In September 2023 TCC conducted an internal audit of the risk controls for *IN321 – City and Council is not yet resilient to natural hazards* as part of the 2023/2025 Internal Audit plan. The audit involved the auditors interviewing seventeen 'control owners', Managers, and Team Leaders, including: Staff Member BA, SM AZ SM AZ, Staff Member AT, and Staff Member BC. In its *Summary of Findings* the report stated:

> The overall conclusion is "the majority of controls are strong with few or no control gaps." Some minor action may be required to improve controls.
>
> While TCC cannot control natural events and hazards, there are strong controls in place to ensure that the Council and the city are as resilient as possible. Natural hazard awareness and management is evident across all areas of the business reviewed. There are strong legislative and regulatory controls in place and TCC has appropriate processes in place to ensure that these controls are adhered to.
>
> There are high levels of engagement with external stakeholders to ensure that natural hazards and resilience is considered on a sub-regional, regional and national level.

The Beachside Holiday Park – Natural Hazard Emergency Response Plan and Operational Instructions

[338] I have reviewed the following documents regarding emergency and business management procedures relating to the Beachside Holiday Park:

1. Emergency Services Map – Mount Beachside Holiday Park

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[195] Note: There are some differences between the escalation requirements, but whichever escalation route is adopted the notification will result in high level attention to the risk both initially and thereafter by way of review at prescribed intervals.

2. Mt Holiday Park - Emergency Response Plan (16 July 2024)

3. Mt Beachside Holiday Park Risk Register (Updated 02 May 2024)

4. Evacuation Procedure for Mount Holiday Park (Version 2 – Published 26 January 2026)

5. Emergency announcement script (for fire and tsunami events)

6. TCC - Emergency Procedures flip chart

7. Mount Beachside Holiday Park – Department Business Continuity Plan (19 May 2023)

8. Spaces and Places Master Risk Register - Mauao (Updated 20 June 2024)

[339] There is no mention made of landslides in either the Holiday Park Emergency Response Plan or the Evacuation Procedure. There are references to earthquakes, volcanic eruption, storms and high winds, and flooding in the Emergency Response Plan. The Evacuation Procedure for the Holiday Park refers to fire, earthquake, and tsunami, but does not mention landslides.

05

Findings

FINDINGS

(1) TCC's response to the WSP report (1 December 2023)

[340] The WSP Natural Hazard Risk Assessment of the Beachside Holiday Park, dated 1 December 2023, identified the landslide and rockfall hazard to the campground and suggested among other controls, consideration be given to obtaining a site-specific quantitative assessment of slope hazard and the development of a Trigger Action Response Plan (TARP) with rainfall-based thresholds. It was the first of two consultant reports to make those recommendations. Neither was implemented before 22 January 2026.

[341] The WSP report was commissioned by the Climate and Sustainability team under Staff Member AT's delegated authority. It was provided by Staff Member AT to the campground team (Staff Member Q and Staff Member AP) and copied to the natural-hazards adviser, Staff Member BB, and to Staff Member BA,[196] but it was never escalated upward within TCC's reporting structure. It never reached the Staff Member AV, the General Manager, the Chief Executive, or the Strategy, Finance and Risk Committee.

[342] Staff Member AT made several attempts between 30 August 2023 and 1 March 2024 to engage Staff Member AP and Staff Member Q, first as regards obtaining a natural hazard assessment for the campground, and following receipt of the WSP report on 1 December 2023 to convene a meeting with them and WSP to discuss the report. Several of those approaches went unanswered. A meeting with WSP was convened only after her fourth approach and around sixteen weeks elapsed between delivery of the report on 1 December 2023 and the meeting held on 18 March 2024.

[343] There are conflicting versions of what was discussed at the meeting on 18 March 2024. Whether the discussion centred on rockfall and flooding, or involved detailed discussion regarding the risk of landslide and included the suggestion that a TARP be prepared, is an issue that is noted but not determined in this Review. Following the meeting the recommendations in the report, including arranging the

[196] To Staff Member BA because of her work overseeing the city-wide slope stability mapping project and Staff Member BB as a member of Staff Member BA's team and natural hazards specialist.

preparation of a TARP for the campground in relation to landslides were never followed up by anyone at TCC, and WSP were never engaged to do so.

[344] Whatever the reasons for the Holiday Park management not notifying and escalating the identified risk or addressing and acting on the recommendations in the WSP report, the lack of any follow-up action regarding the report's recommendations ought not to have been the end of the matter.

[345] And while Staff Member AT had knowledge of the risk, her decision not to escalate the matter herself up her reporting line to Staff Member AZ, should not have been the end of the matter either. Staff Member AT understood her team's role to be advisory and to end once the WSP report had been obtained, provided to the campground management, and discussed with the campground manager and WSP. As a member of a comparatively new team and conscious of its standing, she felt unable to escalate the matter through her own reporting line without being seen to go "behind the backs" of the operational managers. She did not send the report to her own manager, SM AZ SM AZ, and neither she nor Staff Member AZ can now recall whether she ever discussed it with him. The WSP fee for the report was within her delegated authority and its commissioning did not require his prior approval.

[346] Staff Member Q does not appear to have appreciated that the risk identified by WSP was such as required him as owner of the risk to escalate it in accordance with the Risk Management Policy, Framework, and Risk Register. Although Staff Member Q and SM AP SM AP had both received the WSP report and had been directly involved in the process by which it had been obtained, neither of them had any specialist knowledge to make an informed assessment of the WSP report and its implications, and unfortunately SM AP SM AP was not able to be involved in the discussions that took place with WSP at the meeting on 18 March 2024. Staff Member AT regarded her role as being that of an advisor to the Holiday Park management, and accordingly she considered that decisions regarding implementing the recommendations in the WSP report were a matter for them, and not herself. In this context it is also appropriate to note that the landslide risk identified and described by WSP in its report had a "Low" to "Medium" risk assessment. In the result however, no one took any steps to escalate or notify the existence of the landslide risk identified in the WSP report in accordance with TCC's

Risk Management Policy and Risk Management Framework, which meant that despite TCC being in possession of the WSP report identifying a risk of landslides occurring in the campground, the detailed process of risk assessment, mitigation, and monitoring established by the Framework's *engine room*, was never engaged.

[347] As noted, this reveals a significant flaw in TCC's risk identification, reporting and management structure and process. Had an effective and robust risk identification, risk reporting, risk management process, and administrative/organisational structure been in place including a process which duplicated escalation of the geohazard risk by the WSP report being automatically sent to the Risk and Assurance team upon receipt and which rendered subjective assessments or responses by the TCC staff who received the report 'redundant,' this situation would have been visible to those in the TCC organisation with responsibility for ensuring that risks of this kind were being properly and effectively addressed and managed. A system which enabled this situation to occur and then continue without intervention and rectification has a significant weakness in that it depends on staff notifying the existence of a risk before it can be effectively assessed, mitigated, managed and overseen by those in the organisation having the requisite experience and expertise to make informed decisions regarding health and safety matters affecting the Council and for which the Council is responsible.

[348] In this instance, the situation had developed and had continued to exist because the risk identified by WSP was not 'captured' and recorded by TCC following receipt of the report from WSP. Capturing the risk required an appreciation of the nature and gravity of the risk, which in turn required an appreciation of the geotechnical issues underlying the recommendations made in the report and their implications in terms of the natural geohazard and the risk it presented to the campground operation and campground occupants. Neither Staff Member AT nor the campground team had any specialist geotechnical knowledge themselves, and so in this context, the TCC system was wholly reliant on them to make the appropriate decisions and to carry out the actions that would ensure that the identified risk was properly assessed, mitigated and managed.

[349] Because of the technical nature and contents of the WSP report, its treatment by the organisation should not have been left to the decisions and assessments of a member of the Sustainability Team or members of the campground team to decide what should be done with it. Upon receipt, it should automatically have been referred to the Risk and Assurance team to be noted and 'triaged' for referring to appropriate staff within the organisation having relevant expertise (such as geotechnical qualifications) or experience dealing with geotechnical issues. Such a process would involve drawing on the collective strengths and expertise held within the organisation, rather than leaving decisions about how the recommendations in the report should be dealt with to people with limited knowledge and no expertise in the area covered by the report.

[350] Such an automatic reference of expert reports dealing with matters affecting health and safety (either directly or indirectly) should be applied to all such reports, not just geotechnical reports. A consequence of adopting such a process will ensure that not only is the report concerned evaluated more effectively, but also by reason of its existence being noted, that thereafter management and carriage of the issues raised can be allocated to specific individuals, and the process monitored so that it does not disappear and get lost and forgotten somewhere in the organisation. I have accordingly made a recommendation to this effect.

(2) TCC's response to the HD Geo report (6 June 2025)

The report – landslide risk to campground – "moderate"

[351] The HD Geo report of 6 June 2025 was the second geotechnical consultant report to recommend both an updated quantitative (NHRA) assessment and the development of a TARP to address the landslide and rockfall hazard to the campground. The geohazard register in HD Geo's report recorded, as items 001 and 002, the two large historic landslide features on the slopes directly above the

campground (estimated 13,000m³ and 8,000m³). Neither a TARP nor an updated assessment had been commissioned by 22 January 2026.

[352] Consistent with the scope of HD Geo's terms of engagement, the report was principally directed at rockfall and land instability on the Mauao Historic Reserve and adopted a "track-user" framing. However, it nevertheless included the campground in its list of Mauao tracks and TCC assets at risk of landslides and rockfall. The report assessed the likelihood rating for risk to life on the basis that track users were less likely to be present in heavy rainfall. That reasoning, while logical for track users, did not address the static, often sleeping, campground population, who were most exposed precisely during heavy rainfall. As regards risk to life/users the report noted that the likelihood of landslides was *Possible,* the consequence *Medium,* and the qualitative risk to life/track users, *Moderate.* And as regards the risk of rockfall to the campground, the report assessed the likelihood as *Possible*, the consequence as *Major,* and the qualitative risk to life/track user, as *High*. [197] And while consideration of the risk of landslides and rockfall in relation to the campground was outside the scope of a report that was to provide ongoing rockfall and land instability monitoring on the Mauao Historic Reserve, HD Geo's inclusion of the risk assessments regarding landslides and rockfall affecting the campground were nevertheless clearly regarded by TCC staff as being relevant to the campground management. Hence Staff Member E provided the report to Staff Member Q on 29 August 2025, and Staff Member E sent it by email to Staff Member AB on 5 September 2025, saying he wanted to discuss with her at their next catch-up.

[353] The HD Geo report came to Staff Member AB within weeks of her assuming responsibility for the campground (18 August 2025), in the course of a restructure, without any handover, and without a background in asset management.

The direction given to Staff Member E

[354] After Staff Member AB, Staff Member Q and Staff Member E had agreed at their 15 October 2025 meeting to proceed with obtaining a follow up report from HD Geo, SM AB Staff Member AB reported this decision to Staff Member T,

197 HD Geo, Mauao, Mount Maunganui – Geohazard Review Report (6 June 2025), page 23

asking her to arrange the funds for the further report to be obtained for the campground. Staff Member T decided that a single report covering both Mauao and the campground should be obtained. Staff Member T also decided that, on the basis of Staff Member E's experience and relationship with iwi, he was to arrange for a follow-up report to be obtained from HD Geo. She directed Staff Member P (to whom Staff Member E directly reported) to in turn instruct Staff Member E to make the arrangements with HD Geo to obtain a single report addressing the matters they had recommended in their June 2025 report and covering both the mountain and the campground.

[355] The effect of Staff Member T's decision and direction was to shift responsibility for addressing the risk across an administrative boundary. Identification of the risk had been included in a monitoring report prepared by HD Geo in relation to Mauao (SM E SM E's responsibility) but it referred to and presented a risk to the campground and its occupants (Staff Member AB's and Staff Member Q responsibility).

[356] As I have noted, Staff Member E says that it was his understanding that what was decided and what he was instructed to do was to arrange for HD Geo to undertake a rockfall risk assessment as that was what Staff Member P had referred to in his 2 October 2025 email. Staff Member P says however, that was definitely not his intention and he points to the subject line of his email which reads: *Landslide & Rock Fall Risk Assessment.* It is clear that there was a significant misunderstanding. Their different understandings of what Staff Member E had been instructed to do and what he had done, is a crucial factor which lies at the heart of the explanation why HD Geo were never instructed to proceed with undertaking the assessment it had recommended, nor asked to prepare a TARP for the campground in respect of the geohazards which had been identified in the June 2025 report.

[357] Pursuant to instructions given to him that a report be obtained, Staff Member E said in his email to HD Geo Staff Member B on 4 November 2025, that he had "been asked to undertake the recommended assessment for within the campground",[198] and he requested "a quote to undertake the recommended assessment that came from [HD Geo's] initial Mauao report. As well as ongoing monitoring that will align with the

198 Emphasis added.

Mauao monitoring that we have planned." Adding: "Please be aware we are looking for a practical report as there are large limitations of what can be achieved or changed in the campground as well as having the same underlying archaeological nature as Mauao."

[358] While it appears that it was not his intention to do so, Staff Member E's request for "a practical report", thereby constraining the scope of a risk-to-life assessment by reason of limitations on what could be changed in the campground, would necessarily conflate the proper assessment of the risk with the feasibility of mitigating it. Such an approach is not consistent with Staff Member P's 2 October email in which he had referred to the possibility that a further report could "identify risks beyond [Staff Member Q] control."[199]

[359] HD Geo Staff Member B email reply of 4 November 2025 was written immediately following the telephone conversation he had with Staff Member E. As outlined earlier, SM E SM E and HD Geo Staff Member B have differing accounts of this conversation and I make no finding on the matter.

[360] Rather than agreeing to provide the quote for an assessment report that SM E SM E had requested in his email, HD Geo SM B recommended something quite different, namely that the campground be "officially included" as part of HD Geo's monitoring inspections, and they would include any geohazards that may occur within the campground that the campground management notified them of. HD Geo SM B said that if in the course of the monitoring inspections they identified any geohazards with "elevated risk to the campground" they would report it to Staff Member E and depending on the "immediate risk level" they would make a recommendation for a detailed natural hazard assessment, remedial works or increased monitoring. This proposal was different from what Staff Member E had asked HD Geo for in his email to HD Geo SM B Under HD Geo Staff Member B proposal, HD Geo would not be preparing the follow-up report that SM T SM T had directed be obtained which would include the campground. HD Geo SM B had also offered to "help create a trigger action response plan (TARP) specific for

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199 The full text of Staff Member P's email is set out above in paragraph [288]. It was addressed to SM Q, and the relevant sentence stated: "Please be aware that any report SM E prepares on your behalf may identify risks beyond your control, which could potentially lead to obligations such as removing cabins or other structures".

identified geohazards at Mauao" and said that the TARP "should also include the campground."[redacted] asked [redacted] to send him over any existing TARPs that he might have, and said that any work to prepare TARPS would be a variation to their existing contract and would be charged at the same rate.

[361] [redacted] email clearly required a response from either [redacted] or someone else at TCC to confirm acceptance of what he proposed, and for instructions to proceed. HD Geo has confirmed that [redacted] did not reply, and nor did anyone else from TCC ever provide instructions to HD Geo to go ahead with what [redacted] had proposed. From HD Geo's perspective, until their email was answered and their instructions were confirmed, they had not been engaged to prepare a TARP for the campground, and that remained the situation on 22 January 2026.

[362] When [redacted] saw [redacted] a week later on 11 November 2025 and asked him for an update, she says he told her that he had actioned obtaining the follow-up report from HD Geo and that monitoring would start in February. However, [redacted] says he told [redacted] that he had actioned obtaining the high-risk assessment from HD Geo, and that their recommendations had changed to undertaking regular monitoring and undertaking specific assessments if issues were found during the monitoring, and that the monitoring would start in February. Shortly afterwards, [redacted] sent [redacted] an email forwarding her his 4 November email to [redacted] reply. [redacted] simply referenced his forwarding email: *Mount Campground – Maunganui.*

[363] In their interviews with me, [redacted] and [redacted] have each explained their respective understandings. [redacted] says that by forwarding [redacted] [redacted] the 4 November email exchange, he considered he had passed the matter back to her and the campground administration, and that his responsibility for obtaining the recommended assessment from HD Geo was at an end. [redacted] explained that she understood that it had been decided that a single report was to be obtained covering both the mountain and the campground, and that [redacted] had been given the task of getting the report done, and accordingly she was waiting for the report that [redacted] was arranging to have prepared by HD Geo. She says that while she understood that the monitoring inspections would commence in February, she did not

know Staff Member E considered that he had completed his task of obtaining a follow-up report, and that he would not be taking any further steps.

[364] Other than what was evident from the contents of HD Geo Staff Member B 4 November email, Staff Member AB had no knowledge of what Staff Member E and HD Geo SM B had discussed or agreed in the course of their telephone conversation on 4 November, and accordingly, following her conversation with Staff Member E on 11 November, she was still proceeding on the basis that he was carrying out the task he had been given. She says that in response to her request for an update Staff Member E had told her that he had "actioned the report with HD Geo" and that the monitoring would start in February. From this she understood that Staff Member E had the matter in hand, and there was nothing in what he said to her to indicate that he considered his role in the matter to have ended. The email he sent her shortly following their conversation, with no message or information other than the subject line: *Mount Campground-Maunganui*, contained nothing to suggest otherwise.

[365] Quite obviously, a forwarded email exchange with no covering message and without more, would not clearly inform Staff Member AB that Staff Member E was transferring responsibility for obtaining a further report and a TARP for the campground back to her. It was therefore not unreasonable for Staff Member AB to have been proceeding on the basis that Staff Member E continued to have carriage of the matter after 11 November 2025.

[366] As I have noted, these different understandings of who was to be responsible for obtaining a further report addressing the recommendations in the HD Geo report and obtaining a TARP for the campground, lie at the heart of why nothing further had been done to progress this matter by 22 January 2026.

[367] Staff Member E has explained that he understood that he had been asked to contact HD Geo and request a follow-up report dealing with rockfall risk affecting Mauao and high risk areas of the campground. He says that in his position as Staff Member E Staff Member E within the Spaces & Places structure, he had no ability or authority to represent the campground in relation to its ongoing dealings with HD Geo over natural geohazards, or engaging the firm to provide the ongoing services such as HD Geo Staff Member B

was proposing, and he understood that his task was simply to request a follow-up report and no more. It appears that Staff Member E regarded HD Geo Staff Member B suggestion that HD Geo should include the campground in their monitoring and report on any geotechnical hazards they observed or were referred to them by the campground, together with the offer to assist with the preparation of a TARP for specific identified geohazards on Mauao, and for the campground, as effectively meeting all the objectives behind getting a single follow-up report. So from Staff Member E's perspective although the conversation with HD Geo SM B had led to HD Geo SM B proposing something different than HD Geo simply preparing a follow-up report, what had been proposed would have appeared to be (and was no doubt intended to be) a more effective way of proceeding, as it would result in a specific TARP for the campground and any identified geohazards on Mauao, and in the future HD Geo would be monitoring both Mauao and the campground in relation to geohazards.

[368] As HD Geo Staff Member B email set out what he had suggested HD Geo could do to ensure TCC was implementing the recommendations in its report, Staff Member E thought that simply forwarding the 4 November emails to Staff Member AB following their conversation on 11 November would sufficiently inform her of what HD Geo SM B had proposed, leaving her to contact him directly about implementing it. The intention of obtaining a single follow-up report from HD Geo as the means of implementing the recommendations made in the 6 June 2025 report, went "off the rails" when HD Geo Staff Member B proposed something different than simply preparing another report, and when Staff Member E's "update" to Staff Member AB did not make it clear to her that Staff Member E regarded his task of requesting a follow-up report as having been completed, and that HD Geo Staff Member B HD Geo would be waiting to hear from her in response to his proposal.

[369] In the context of this review it is unnecessary to resolve the conflicting accounts of Staff Member AB and Staff Member E regarding these conversations. It is the existence of the misunderstanding that is significant. This misunderstanding between Staff Member AB and Staff Member E illustrates why important instructions of this kind always need to be recorded in writing, with a written acknowledgement from the recipient, and with any uncertainties queried, resolved, and recorded in writing. With written instructions and acknowledgements the possibility of misunderstandings like this is markedly reduced.

[370] The consequence of this sequence of events was that by mid-November 2025: HD Geo had not been instructed to proceed to prepare a TARP for the campground; Staff Member E was proceeding on the basis that he had handed the whole matter back to SM AB Staff Member AB; Staff Member AB believed Staff Member E was actioning the matter and had engaged HD Geo to prepare the single report that had been agreed would be obtained, and she was waiting to hear about any progress, and Staff Member T had received the forwarded email exchange as the basis for a discussion with Staff Member AB at a future catch-up. No decision to do anything more was made by anyone at TCC, and HD Geo awaiting instruction, did nothing further. The recommended controls fell into the gap between Staff Member E and Staff Member AB, and were 'owned' by neither.

[371] In my view, the failure to implement the HD Geo recommendations was essentially systemic in nature. A geohazard had been identified which had the potential to cause deaths or serious injuries; an effective means of mitigating this risk (by means of a TARP) was readily available from HD Geo subject only to the receipt of an instruction requesting them to prepare one, and yet no single person at TCC had been allocated 'ownership' of this risk, there was no recorded or acknowledged transfer of the responsibility between any TCC staff, no response to HD Geo's 4 November email, no escalation of the matter above the operational level, and no process to log, track or close out the HD Geo recommendations, notwithstanding that it had been collectively decided by Staff Member T, Staff Member P, Staff Member Q, Staff Member E and Staff Member AB that TCC should get a follow-up report. These multiple deficiencies, rather than the conduct of any single individual, are the explanation for TCC's failure to action the recommendations made in HD Geo's report during the seven and a half months that elapsed following TCC's receipt of the report in June 2025, and the landslide on 22 January 2026.

(3) Multiple failures to escalate the known landslide risk

The 1 December 2023 WSP Report – Staff Member Q & Staff Member AP

[372] As noted above, Staff Member AT engaged WSP to prepare the report which was delivered on 1 December 2023. She sent the report to Staff Member Q on 3 December 2023 and after some persistence on her part, arranged the meeting with the WSP authors of

the report held on 18 March 2024. Staff Member Q knew that WSP had identified natural hazard risk from rockfall, even if he didn't appreciate that the report had also identified the risk of landslide into the campground. Under the terms of the Spaces and Places Holiday Park Risk Register, Staff Member Q as Staff Member Q ,[200] was the person responsible for 'owning' the risks identified in the WSP report, as such it was primarily his responsibility to notify the risk to the relevant Senior Leadership Group member – Staff Member T. He failed to do so.

[373] Although Staff Member Q decided that implementation of the recommendations made by WSP were matters for experts – *perhaps engineers* – to look into and that doing so was beyond him, he nevertheless had an obligation under the Risk Management Policy, Framework and Risk Register, to notify the existence of the report to the relevant Senior Leadership Group member. The fact that Staff Member Q thought that the WSP report was primarily focussed on rockfall risk and that he didn't know that there was anything in the report about landslide risk, demonstrates the very reason why the notification and escalation provisions are in the Risk Management Policy and Framework. The notification process, when complied with, ensures that other appropriately qualified and experienced staff in the TCC organisation can bring their knowledge, experience, and attention to the contents of such a report and decide what its implications are and what controls or mitigations should be put in place to mitigate and manage the risk.

[374] Staff Member AP also received the WSP report. Although he was not the designated 'owner' of the risk, that did not mean that he had no responsibility in relation to the risks and suggested 'controls' described in the WSP report. Pursuant to the provisions of the TCC Risk Management Framework, as a member of the TCC staff he was required to: *play a part in identifying risks and opportunities,*[and] *actively managing them within* [his] *sphere and scope of work.*[201] The Risk Management Policy 2022 provided:[202]

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200 Staff Member Q is named on the TCC Spaces and Places Organisation chart as: Staff Member Q Staff Member Q .

201 Risk Management Framework (First adopted 20 April 2023) : *People & Responsibilities.* Page 13.

202 Risk Management Policy (2022). Paragraph 5.4. Document 308635.

Risk Management Roles and Responsibilities

5.4.1 Risk management is everyone's responsibility relevant to their role as set out below: ….

Operational managers and leaders: Develop and manage risk and opportunity management plans for their team in accordance with risk management policy and framework.

Staff: Identify, evaluate, report and manage risks in their daily activities and projects.

[375] As the Staff Member AP, to whom Staff Member Q reported, and quite apart from the obligation on Staff Member Q under the Holiday Park Risk Register, as a matter of good management, I consider the fact that WSP had been engaged to prepare a geohazard report on the campground is something that should have been reported by Staff Member AP to Staff Member T in accordance with the Policy and Framework's expectation that he would play his part in the process of managing the risks within his scope of work. The existence of the WSP report was not brought to Staff Member T's attention and consequently she was never in a position to give the matter her "close attention" and "ensure that effective controls [were] identified and implemented."

[376] I have not seen any records or been told anything by any of the TCC staff I have spoken to confirming that any notifications of the kind referred to in the Spaces and Places Risk Registers for the High level risk of landslides were ever provided by either of the relevant risk owners, Staff Member Q (as regards the WSP report) and Staff Member E (as regards the HD Geo report), to Staff Member T as Staff Member T and as the relevant Senior Leadership Group member (Tier 3).

Staff Member T

[377] Although Staff Member Q did not notify and escalate the WSP report he was provided with by Staff Member AT in December 2023, as he was required to by the Risk Management Policy and Framework, and Spaces and Places Risk Register, at some stage the landslide risk to the campground had been recognised and put on the Spaces and Places Risk Register – albeit with a non-specific and generic description. I have not determined who was responsible for that being done, or when it happened. SM T SM T has explained that she was not even aware of these risk registers, and says that they were never brought to her attention as part of her induction process, nor by any staff member. She says that following commencement of her employment at TCC she actively engaged with the TCC Health & Safety team and invited the Staff Member BO

to attend fortnightly team-led meeting she had arranged. She says that at no stage was a Spaces and Places Risk Register ever mentioned. Staff Member T further explains that although she is familiar with the concept of project specific risk registers, and her team regularly assess project specific risks, she has never been informed about broader activity risk registers, and at no stage had it been suggested to her that she needed to develop instructions about landslide risks in relation to the campground.

[378] It is remarkable that a detailed process of preparing these risk registers and updating them, and their very existence was somehow not brought to Staff Member T's attention given her position and responsibilities as Staff Member T, which she had held for almost three years prior to January 2026. That is a further and significant organisational failure.

[379] Although the description of the risk in both the risk registers was generic (*landslides*), and did not identify any specific hazard, on both risk registers *landslides* was classified as being a ***High*** level risk. Having that classification meant that Staff Member T as the relevant Senior Leadership Group member was required to maintain close attention to the risk and ensure that effective controls were being identified and implemented. However, as Staff Member T says that she was never made aware of the existence of the risk registers, and the obligations they placed on her, as she has explained it, she was never prompted by the provisions of the registers to make any enquiries to find out more about the landslide risk; just what the risk was; what TCC knew about it; and what was being done about it. Had the risk registers been brought to Staff Member T's attention either during her induction process or subsequently, she says that may have prompted her to make appropriate enquiries. Had enquiries been made, there was a considerable amount of information to be found to inform her understanding of the nature of the risk. For example, enquiries made after 1 December 2023 could have led to her discovering that the WSP report had been prepared. That report had been provided to two of the members of her Staff Member T Team, one of whom, Staff Member AP, reported directly to her. Staff Member T says however, that it was never provided to her, and nor was she ever alerted to its existence through the risk registers, as she did not know they existed.

[380] As I have outlined above there was a large body of geotechnical information relevant to the campground held by TCC including the report by Dr Richards in 1999 and the multiple reports prepared by Mr McHugh of Avalon. These reports had in many cases been commissioned by, and provided to, Spaces and Places staff. Staff Member T explained that to her knowledge there is no central repository for previous geotechnical reports with content relevant to the campground.

[381] As regards the December 2023 WSP report and in this context, it is relevant to note that as the Sustainability team had engaged WSP and paid for the report, the expense would not appear in the Holiday Park financial records, and consequently there was no financial or accounting record that would alert Staff Member T to the fact that a report from WSP had been obtained. Although certainly not the intention, a consequence of the situation where one team (Sustainability) commissioned and paid for a report concerning the activities of another team (here, the Holiday Park) was that the process of obtaining and receiving the report could take place without being visible to the upper level of the Spaces and Places management by means of financial reporting and oversight. Unless told about the WSP report Staff Member T would not see it (particularly the cost incurred in obtaining it) referred to in the Holiday Park financial reporting. This is another example of the consequences of 'siloed' information being held by one team (in this case Sustainability) which was not known to the senior management of another team (Spaces and Places), even though the subject matter of the report obtained was directly relevant to issues that concerned the Spaces and Places upper management, namely the existence of a geohazard affecting the campground and the safety of people staying and working there.

[382] The contrast with the 2025 HD Geo report illustrates the point. When the decision was made to obtain a follow-up report concerning the campground, it required funding to be arranged, and Staff Member AB accordingly asked Staff Member T to arrange the OPEX funding for it — a request that brought the matter to Staff Member T's attention and led, in turn, to Staff Member P's email of 2 October 2025 seeking a GL code to cover its cost. The need to fund the further report thus created a financial touch-point that made it visible to the upper level of Spaces and Places management, whereas the WSP report generated no equivalent signal on either reporting line, neither up Staff Member AT's own line, as the cost fell within her delegated authority and was

met from the Sustainability team's budget, nor across into the Holiday Park's financial records and up Staff Member T's line in Spaces and Places.

Staff Member AT

[383] Having initiated and led the natural hazard risk management pilot project earlier in 2023 from which the landslide risks to the campground had come to be identified, Staff Member AT was well aware of the contents of WSP report and had received it, distributed it, and discussed it with the WSP authors of the report. In light of her interactions with Staff Member Q, during which he had indicated that the WSP recommendations could be considered in the context of a future budgeting process, I consider that Staff Member AT would have appreciated that he was unlikely to be immediately following up the recommendations in the report. Although she was not the 'owner' of the risk, she was not precluded from notifying the risk to the appropriate people within the TCC organisation. The provisions of the Framework make it clear that the most effective means of managing risks is to ensure that they are first identified and notified, whereupon they can be properly assessed and managed. Although I have already referred to the following provisions of the Risk Management Framework, I shall repeat them here because of their particular relevance to the situation SM AT Staff Member AT encountered when dealing with the WSP report and Staff Member Q. The Framework refers to identifying a risk as *Step 1*:

> This is the process to scan the business and its environment for new and emerging risks and opportunities and to maintain an understanding of existing risks. It includes organisational context, a risk-cause-impact descriptions, categories of risk sources and risk ownership.
>
> ……

[384] Under the heading: *People and Responsibilities:*

> People are at the heart of Council. Every member of staff, contractor, and volunteer plays a part in identifying risks and opportunities, actively managing them within their sphere and scope of work.
>
> ….

> Each person has a part to play in risk management and we consider every person is important wherever they work in our organisation. Responsibilities for each of us will differ and depend on the level at which we work. These are set out in the Risk Management Policy.

[385] The responsibility to notify and escalate a risk is clearly not limited to being solely an obligation of the risk 'owner'. The responsibility is on everyone in the TCC organisation. There is an expectation that all staff in responsible positions such as SM AT Staff Member AT will take steps to ensure that any risk or risks they identify within their scope of work are being properly and responsibly dealt with, and where necessary notified – especially if it appears that no-one else is going to. Here Staff Member AT knew about the risk, knew that Staff Member Q was unlikely to do anything in terms of immediately implementing the recommendations made in the report, and that being the case, that the risk/s identified in the report would likely continue to exist without being further assessed, mitigated, managed, and monitored unless she herself took steps to notify and escalate the report and the risks identified in it.

[386] The reasons Staff Member AT has given for not notifying and escalating the risk are not sufficient justification for her not doing what was clearly required of her in the circumstances – that being prompt notification of the risk to her manager accompanied by a copy of the WSP report. The situation that Staff Member AT encountered with SM Q SM Q, is an example of the very reason the Framework makes it clear that there is an expectation that all staff will play their part and contribute to help ensure that the TCC risk management process is effective – and especially in relation to the identification and notification of any risks where human life and safety is or may be at risk.

[387] While TCC's failure to take any steps to implement the recommendations in the WSP report, including in particular that a TARP be prepared for the campground, is not solely Staff Member AT's responsibility, her failure to act in accordance with the Risk Management Policy and Framework is another factor contributing to TCC's failure to have effective measures in place to deal with the risk of landslides coming into the campground.

Staff Member T *–HD Geo report*

[388] When I interviewed Staff Member T, she told me that she had no knowledge of the existence of the WSP report until after the 22 January 2026 landslide had occurred. She had not seen it and was not aware of it. Staff Member T said that she had been in the position as Staff Member T for some three years and during that time she had never seen any of the previous geotechnical reports that referred to landslides presenting a risk to the campground.

[389] Staff Member T told me that the HD Geo report which Staff Member AB had first brought to her attention around July – August 2025 was the first geotechnical report she was aware of relating to the Holiday Park. Staff Member T told me that she was not given a copy of the HD Geo report, and had not asked to be sent a copy of it. She said that she and Staff Member AB had a conversation about the report, and Staff Member AB had talked her through what Staff Member AB understood were the risks identified in it, which were *mostly about rockfall at that point of time*. In late 2025 Staff Member T instructed Staff Member P to get his team to arrange for a follow-up report to the HD Geo report to be obtained, as was confirmed by Staff Member P in the email he sent on 2 October 2025 to Staff Member Q, and copied to Staff Member E and Staff Member AB.

[390] Despite knowing about the existence of the HD Geo report, Staff Member T did not obtain a copy of it or read it, and as a result, her understanding of its contents and significance was necessarily based on whatever she was told by Staff Member AB. That level of engagement would not meet the required standard contained in the Spaces and Places Risk Register of *maintain[ing] close attention to the risk and ensur[ing] effective controls are identified and implemented.*

[391] In my view what this situation illustrates is the importance of senior management who become aware of the existence of a report such as the HD Geo report, which is dealing with matters of public safety, to actively engage in a process of finding out what is being said and recommended, and to take appropriate steps to ensure the issues raised have been properly assessed and are being dealt with effectively. To be effective, the TCC Risk Management Policy requires not only notification of risks but also recognition of risks, which may involve those staff having

responsibilities making enquiries to be satisfied that any significant risks that are identified, especially of course risks having the potential to impact human life and safety, are made the subject of their focussed and earnest attention.

[392] Staff Member T says that she was first informed about the HD Geo report in around July – August 2025 by Staff Member AB. But as Staff Member AB did not commence her position having responsibility for the Holiday Park until August 2025, I expect that the conversation she had with Staff Member T is unlikely to have been until after 5 September 2025, which is when Staff Member AB says she received the HD Geo report from Staff Member Q. Despite Staff Member T's involvement in the decision to request a single follow-up report in early October, and Staff Member AB reporting to her following receipt of Staff Member E's 11 November 2025 email, it appears that Staff Member T took no steps to follow progress of the matter, and that remained the position as at 22 January 2026.

General comment

[393] Speaking generally, there may be a variety of reasons why a staff member who has been informed about the existence of a risk does not report and escalate it. It may be because they did not understand or appreciate the gravity of the hazard or the seriousness of the risk. Alternatively, it could be because they do not consider it was their responsibility to take it further or understood that another person was doing so. A robust risk management system should incorporate checks and safeguards to ensure that such misunderstandings are identified and remedied before they adversely affect the management of risk. I will return to this in my recommendations.

(4) The consequences of not having a Trigger Action Response Plan in place by 22 January 2026

[394] As the authors of the ENGEO report have said, a properly developed and implemented Trigger Action Response Plan was the most suitable option to manage the levels of risk that had been assessed because the campground's occupants were mobile and few permanent structures were exposed, so that evacuation (avoidance)

was both achievable, and a higher-order control than engineered consequence-reduction such as bunds or fences.

[395] The central feature of such a plan is that it does not depend on anyone forming, unaided and in the moment, a correct judgement about the state of the slope. It fixes, in advance and by reference to defined criteria, the circumstances in which precautionary action must be taken, and it equips and authorises trained staff to take that action when those criteria are met. A properly framed TARP of the kind recommended would have contained two kinds of trigger. The first was a rainfall threshold (either forecast or actual) — a defined return-interval level which, once reached, would itself require the evacuation or exclusion of the campsites and buildings at the toe of the slope. The second was a set of observable, on-the-ground precursors — among them turbid or muddy water issuing from the toe of a slope, increased seepage, and tension cracking — which, if seen, would independently require the same response. These were not novel or esoteric indicators: the WSP report of December 2023 had itself identified increased water seepage from the slope as a sign to be reported to a geo-professional, and they are the very precursors a TARP exists to convert into defined, mandatory precautionary action.

[396] In my view, each of those triggers would have been clearly engaged on 22 January 2026.

[397] As to the first, the rainfall over 21 and 22 January was the heaviest in some twenty years, and well above the levels associated with previous significant landslide events on Mauao. A TARP of the kind recommended would therefore have been engaged during the night, well before the slope failed, requiring the precautionary evacuation and exclusion of the toe-of-slope area — and a properly framed plan would have kept that area excluded for a defined period after the rainfall had ceased, precisely because, as this event so tragically demonstrated, slope failure may follow hours after the rain has stopped and the weather has cleared. However, in the event that the campground manager and staff were not informed of the level of rainfall that had fallen, or for some reason were unaware that the trigger rainfall level had been exceeded and were thus proceeding on the basis that the TARP rainfall level criteria

had not been engaged, the readily observable second trigger would clearly have been engaged on the morning of 22 January.

[398] As to this second trigger, the observable precursors were not merely present, they were strikingly obvious. From at least around 8:00 am (and probably well before as Lisa Maclennan's photos taken at that time clearly show), a stream of muddy water was flowing freely from the toe of the slope above the Harbour Amenities building in such volume that it was carrying silt and gravel approximately 50 or more metres down the driveway, leaving a wide mat of thick mud and gravel along its path. That is exactly the kind of observable sign that a TARP exists to capture. Even if, for whatever reason, those on site had concluded that the rainfall criterion had not been met, the prolific discharge of muddy, debris-laden water from the foot of the slope would itself have been a second and independent trigger, requiring urgent evacuation of the area around and downslope of the toe of the slope this muddy water was flowing from.

[399] I make no criticism of the campground staff for not recognising that discharge for what it was: as I have explained, they had neither a TARP nor any training in the recognition of landslide precursors, and could not be expected to read a sign that, to the untrained eye was of no significance especially when there was other turbid water elsewhere around the mountain. But that is the precise point. A TARP, operated by staff trained and instructed to act on it, would have removed the need for any subjective judgement: the sign itself would have been a defined trigger, and the response — urgent evacuation of the area downslope of the water seeping toe — would have been required to be implemented as a matter of course.

[400] Drawing these matters together, I find that had a TARP of the kind twice recommended been in place, both of its triggers would have been engaged on 22 January 2026 — the forecast and actual rainfall threshold during the night, and the readily observable discharge of muddy, debris-laden water from the toe of the slope that morning — and that either of them, independently of the other, would have required the precautionary evacuation and exclusion of the campsites and the Harbour Amenities building at the toe of the slope. Had those areas been evacuated and kept clear, as such a plan would require, the people who lost their lives would not have been within the path of the landslide when the slope failed. To that extent, and in that sense,

I find that the loss of life would in all likelihood have been averted. What was missing was not knowledge of the existence of the hazard, nor a means of effectively mitigating the risk of the hazard occurring, but a plan to convert that knowledge into a decision that did not depend on the unaided judgement of those who happened to be present on the day.

(5) TCC held, but never engaged, its own 'in-house' natural-hazard expertise

Staff Member BB

[401] At the time when the WSP (1 December 2023) report was received, and throughout the period during which the HD Geo (2025) report was commissioned, received and considered, TCC had a highly qualified natural-hazard specialist, Staff Member BB Entire passage relates to Staff Member BB Staff Member BB On the information available to me it appears that he was the most well qualified person within TCC to critically assess geotechnical and natural-hazard risk of this kind and evaluate the two reports; no other TCC staff member holds comparable qualifications and expertise.

[402] Staff Member BB had only a peripheral involvement with the WSP Beachside Holiday Park report. He worked within the Asset Services team led by Staff Member BA Staff Member BA On 3 December 2023 Staff Member AT sent him and Staff Member BA copies of the 1 December 2023 WSP report (they being copied in to her email sending the report to Staff Member Q and Staff Member AP. In her email Staff Member AT invited them both to attend the meeting she was planning to hold to discuss the WSP report, saying Staff Member BA Staff Member BB *in copy FYI (let me know if you're keen to join the meeting.)*[203] Staff Member BB was also copied into Staff Member AT further emails sent to Staff Member AP and Staff Member Q in which she endeavoured to make arrangements with them for a meeting date, and he was invited to attend the 18 March 2024 meeting to provide context on the city-wide landslide work he was doing with Staff Member BA However he declined the invitation. It appears that in this context his and Staff Member BA roles

[203] Doc 35520

were understood by all concerned to be advisory to the asset owner (the campground), which was expected to carry the report's recommendations forward.

[403] In his interview with me SM BB also explained the reasons Mauao had been excluded from the city-wide slope-stability mapping review (the complexity of the iwi ownership and management arrangements; the different landslide mechanism expected on Mauao; and that the mapping was directed at consenting and development, from which Mauao was assumed to be excluded).

[404] Critically in my view, Staff Member BB was not consulted about, nor advised of the HD Geo report, and was entirely unaware of it. He did not know it had been commissioned, did not see it when it was received in June 2025, and first became aware of it only after the 22 January 2026 landslide, and following its public release. This occurred notwithstanding that the TCC staff who decided to obtain the HD Geo report and who received it in mid-2025 worked in close physical and organisational proximity to him in TCC's offices.

[405] Staff Member BB own description is compelling. He told me:

> "… it is something that concerned me a lot seeing that report, that something of that significance is being produced within Council, but then, in my role as the Staff Member BB SM BB I am not aware, consulted or given any insight onto that kind of activity that is going on."

[406] Staff Member BB described the position not as an isolated oversight but as a feature of the way TCC operated — a "siloing" of natural-hazard work, such that geotechnical reports were commissioned and dealt with within project teams while the person with the relevant expertise "in the next room" was unaware of them. He observed that, even after the landslide, he had spoken with colleagues who had not realised TCC possessed any in-house natural-hazard expertise at all. Most significantly, he identified the consequence that flowed from this: that the actions taken in response to a consultant's report were "basically determined by the consultants," and that "there is no central oversight on what is an acceptable, or tolerable level of risk for Council on these sites. There's no position on that."

[407] I find that with Staff Member BE TCC had an in-house specialist capability both to recognise the gravity of the landslide risk described in the WSP and HD Geo reports, and to evaluate that risk against tolerability criteria. Although he was provided with a copy of the WSP report and invited to attend the 18 March 2024 meeting, he was not directly and centrally involved in the workstream which was being undertaken to assess the natural hazard risks related to the campground, and he was never engaged or informed at all in relation to the HD Geo report. The failure to engage Staff Member BB and make use of his expertise and skills was not the result of any decision to the effect that doing so was considered unnecessary; rather, it illustrates the systemic organisational deficiencies identified in this Review, namely: a failure to identify a single accountable/responsible owner of a cross-boundary risk; the absence of any requirement to escalate or to obtain an independent internal assessment of a consultant's findings; and the siloed handling of natural-hazard work. Had TCC's own specialist been specifically engaged and tasked with evaluating the WSP report and notified about the decision to obtain a further report from HD Geo, he inevitably would have questioned the need for a second report and sought an explanation as to why the WSP report recommendations had not been followed up.

[408] Staff Member BB has conducted his own post-landslide analysis of the risk. Revisiting Avalon's 2006 estimate of the landslide fatality risk (approximately one fatality every 24 years), which he considered rested on insufficiently conservative assumptions, Staff Member BB substituted the recurrence interval of the rainfall that actually occurred on 21–22 January 2026 (that event having in fact triggered a landslide) and calculated an annual likelihood of the order of one fatality every 2.5 years — a level he assessed as between 100 and 1,000 times above the threshold of tolerable risk. This is Staff Member BB own analysis and I record it as such; it has not been independently recalculated for this Review. SM BB was also clear that, had he been shown the turbid flow issuing from the toe of the slope on the morning of 22 January, he would at the least have required people to be moved away from that area and the downslope zone.

[409] This finding complements the systemic findings concerning the absence of a single accountable owner, the absence of mandatory escalation and independent internal evaluation, and the absence of any TCC position on tolerable natural-hazard risk. It is addressed by the recommendations directed to those matters, and in particular

by the recommendation that safety-critical consultant reports be subject to independent internal evaluation, and that TCC adopt defined tolerable-risk criteria.

The Infrastructure Maintenance Team's Emergency Response Plan

[410] Another example of TCC's 'in-house' and 'siloed' expertise is evident in the Infrastructure Maintenance Team's Emergency Response Plan which was issued in draft in March 2025. As I have noted, it involved the development of a "TARP-like" response plan by another team working independently within the TCC organisation. The Infrastructure Maintenance Team's emergency response plan establishes specific criteria related to slope movement, ground deformation and rainfall as *trigger points*, which are monitored by automated sensors and when observed, reached, and verified by human operators, require action to be taken and trigger multi-agency alerts.

[411] The objective of this emergency response plan is described as "guarantee[ing] that the Maintenance Team and its partners are consistently equipped to detect, assess, and respond to emergencies. The use of precise, data-driven thresholds ensures that each trigger not only signals immediate action, but also plays a critical role in optimising resource mobilisation and minimising adverse outcomes across various emergency scenarios."

[412] This plan removes subjective judgement from a risk assessment and requires immediate action whenever the *trigger* criteria occur or are observed. This plan was clearly developed to address the very issue (albeit in the different context of infrastructure-related emergencies) that arose on 22 January 2026 at the Holiday Park where in the absence of a TARP, the subjective assessment of the risk of landslide by the on-site TCC staff was the only available basis for decision-making and taking precautionary steps regarding the evacuation of people from proximity to the progressively unstable slope above the Harbour Amenities block.

(6) The response on the morning of 22 January 2026

By 4:43 am on 22 January 2026 — nearly five hours before the fatal landslide — TCC had received, through Mr Travis Maclennan's call, a report that slope failure was

occurring in the occupied area of the campground and that some campers needed to be relocated. The after-hours campground mobile went unanswered; the matter passed to the Duty Emergency Management Officer and then into the EOC welfare team and was resolved on the basis that there were no immediate welfare needs and that those affected could shelter in place. The report was handled as a welfare and accommodation matter, not as the report of a geohazard requiring assessment of whether the affected area should be evacuated. At essentially the same time, the EOC was informed of a residential landslide on Waitaha Road which was being treated as an emergency warranting evacuation. The same hazard, caused by the same extreme weather - was thus treated as an emergency requiring evacuations in one location, while being treated as a welfare matter in the other. That inconsistency was not due to any failure on the part of the EOC. The EOC Controller necessarily responded to and managed information received into the EOC, and in the absence of a TARP specifying criteria requiring precautionary evacuation, had no independent basis or ability to recognise that a rainfall-induced slope failure in a densely occupied area such as the campground and as had been reported by Travis Maclennan, was itself a trigger requiring precautionary evacuation.

[413] From around 6:00 am, TCC's response was directed at closing the Mauao tracks and protecting track users. This was done promptly and competently. However, it was not accompanied by any corresponding consideration of the campground occupants at the toe of the same slopes, even though two large slips had come down on the ocean beach side of the mountain and several smaller slips had by then been observed entering the campground. This illustrated the long-standing framing of the hazard as a risk to tracks and track users rather than to the static campground population identified as most vulnerable as long ago as Dr Richards' 1999 report.

[414] The precaution of evacuating and relocating people away from the toe of the slope was raised that morning by a number of campground occupants themselves, particularly but not only Lisa and Travis Maclennan, who recognised the danger and endeavoured to contact and notify the campground management early that morning. There is a conflict between the accounts of SM Q and Travis Maclennan as to what was said and how Staff Member C initially responded, which is not necessary to resolve in the context of this review. In any event I do not consider the timing of Staff Member C arrival

to meet with the Maclennans near the Harbour Amenities block at around 7:40 am was itself a material factor contributing to the tragedy that was then soon to occur.

[415] Most significantly, Staff Member Q had no Trigger Action Response Plan to inform his decision-making and alert him to the gravity of the situation, no rainfall level or other threshold defining when precautionary evacuation should be implemented, and no quantified assessment of the landslide risk. Neither SM Q nor his campground staff had received any training directed to the recognition of landslide precursors such as the seepage and flow from the toe of the slopes as became increasingly obvious during the morning of 22 January. The most consequential safety decision at the campground that morning (that of precautionary evacuation of the campsites and buildings and especially those located in proximity to the increasingly obvious flow of muddy water from the slope above the Harbour Amenities block), was left to the uninformed judgement of Staff Member Q who had not been given any training, or information to make decisions about what should be done.

[416] A stream of turbid, muddy water progressively increasing in volume, flowed from the toe of the slope above the campground for some hours before the slope failure, and several small-scale slope failures occurred in the same period. No doubt because this was something that was unusual and noteworthy it was photographed and videoed. However, there was no sense of it being thought dangerous by those standing in proximity to the slope. Turbid water issuing from the toe of a slope is a recognised, lay-observable precursor of slope failure, which was expressly noted in the WSP 2023 report. As the photographs taken by the Maclennans and Natallia Seliatyskana show, the flow from the toe of the slope above the amenities block while obvious, was not recognised for its significance as a precursor of slope failure by anyone present, including the Maclennans and Natallia Seliatyskana who photographed the toe of the slope and muddy water running from it and who, along with many other campers entered, used, and remained in proximity to the Harbour Amenities block during the several hours preceding the landslide occurring at 9:30am.

[417] While such features are precursors of slope failure, I respectfully agree with ENGEO's expert assessment that they were unlikely to have provided a clear warning to non-specialists in real time: the extreme antecedent rainfall meant that flowing and

turbid water was present in many locations where no landslides occurred, and a number of small-scale and some larger scale slope failures had occurred at several other locations on the mountain during the previous 24 hours. Staff Member Q and the campground staff, without any specific geotechnical training could not have been expected to appreciate that there was a risk that the muddy flows coming from the toe of the slope above the amenities block signalled an increasing likelihood of a massive landslide happening there.

[418] It is also relevant to note that the rain had stopped earlier in the morning of 22 January and the sky had cleared, so that well before 8:00 am there was an increasing expanse of clear blue sky and sunshine. With the cessation of the rain and the weather improving and developing into a classic summer's day, people without any training as to observable precursor signs and indications of potential slope failures would reasonably consider that the risk of landslides, by then at least, to have passed.

[419] Accordingly, and as I have said, I make no criticism of Staff Member Q or any of the TCC staff who were present at the campground on the morning of 22 January for not recognising these signs. In the absence of any appropriate training and without a Trigger Action Response Plan to follow Staff Member Q was unable to recognise that the stream of muddy water flowing from the slope and the succession of small landslips that had occurred along the foot of the slope above the campground were signals he should act on, and as a precaution immediately evacuate the area. The effective management of this risk required a clear documented plan set out in a TARP and trained staff, so that precautionary protective action did not depend on uninformed judgement. This was the crucial failure.

[420] I note that Staff Member Q was in a different position to the rest of the campground staff as he had received the December 2023 WSP report which expressly noted that changes such as increased water seepages or water not flowing from a spring, tension cracks, movement of bulges, should be reported to a geo-professional for assessment as being of significance and indicative of potential slope failure.[204] It is clear however that on 22 January 2026, Staff Member Q did not recognise the implications of the muddy

[204] WSP – *TCC Natural Hazard Risk Assessment – Mount Holiday Park* (1 December 2023), page 32.

water flowing from the slope above the Harbour Amenities block, as demonstrated by the decision he made shortly before 9:30 am to go with Staff Member AA to the foot of the slope in order to recover Member of Public B blue tent. He fortuitously missed being hit by the landslide himself. This underscores the necessity for a TARP, to convert specialist geotechnical advice to a clear set of parameters, *triggers*, and responses, which can be easily understood and actioned. While Staff Member Q was directly involved in the events that led to TCC's failure to take steps to implement the WSP recommendation that a TARP be prepared, TCC's failure to have a TARP in place on 22 January 2026 cannot fairly be attributed to him alone. It was an organisational failure.

[421] The failure to take precautionary steps to evacuate everyone from the area around and below where the fatal landslide happened on the morning of 22 January was in essence deeply systemic in origin, and the consequence of an organisational structure and risk management processes that had failed to capture the natural hazard landslide risk and ensure that it was effectively assessed and managed, despite the widespread knowledge held within the organisation regarding the existence of the risk and the means of effectively mitigating it.

[422] Warnings sufficient to prompt consideration of evacuating the toe-of-slope campsites were received, and the appropriate precaution was articulated on the ground, but there existed no framework to recognise, escalate or act upon them as a landslide hazard, no Trigger Action Response Plan to guide the decision, no allocation of responsibility for making it, and no training to recognise the precursors of slope failure that were present and very obvious.

(7) TCC's corporate risk recording system – CAMMS Riskonnect

[423] TCC's corporate risk system CAMMS Riskonnect - is an organisation-wide register. Its architecture comprises three tiers: seven strategic risks (each a very broad category such as "people, health and safety", owned by a General Manager); approximately one hundred corporate or "enterprise" risks beneath them. As explained by Staff Member AV this level of risk are those which "would… affect more parts of the organisation", rather than "risks which…

impact only a business unit"); and, below those, *operational* risks. Significantly, the operational risks tier had never been brought into the central system: Staff Member AV explained that, while it has been the intention "to migrate… operational registers from being held locally" into the system so as to achieve "that complete strategic enterprise operational relationship between the risks", the work to achieve this has not yet been started due to ongoing resourcing limitations.

[424] Moreover, the risk information recorded within the CAMMS system is populated and maintained by the risk owners themselves, capturing only what each risk owner chooses to record, and at the level of generality the risk owner chooses to adopt. Staff Member AV explained "the level of detail that we have here is what's been captured by the risk owner". The consequence was that the only entry within the system that could even arguably have encompassed the hazard was the word "landslides", appearing as one item in a list of generic causes under a city-wide corporate risk (Staff Member AT),[205] that the city was "not resilient to natural hazards". As Staff Member AV confirmed, that entry was "literally just that high level descriptor of a cause… [t]here's no more detail", and the information entered into the system did not "get down into any level of specific detail". There was accordingly nothing in TCC's corporate risk system that identified the specific landslide and rockfall risk to the campground arising from its location at the foot of the slopes of Mauao.

[425] The high-level character of information on the risk register is illustrated by an exchange in May 2023, at the very time the Sustainability team's pilot risk-assessment work (with Tonkin & Taylor) had identified the Beachside Holiday Park as a high-risk asset. In accordance with TCC's own risk policy risk evaluation information entered into the CAMMS risk system must be consistent across TCC. When Staff Member AT sought to have the more detailed risk information from that work entered into the register, she was advised by Staff Member AW of the Risk team, by email of 19 May 2023, that "[t]he level of detail in the sustainability risk register is not going to translate into CAMMS. This means your risk matrices will not be able to be migrated into CAMMS. All data input into CAMMS needs to be within the

[205] From November 2025 this risk was assigned to Staff Member AT in place of Staff Member BA

boundaries of our TCC risk register template and match TCC's matrices both in language and ratings. Unfortunately, it is not possible to have extra drop down boxes specific for sustainability as this will be confusing to other users. Where you wish to keep your risk workbook (register) with extra detail than TCC's, the solution may be to add these background excel sheets as a link through CAMMS to Objective." Some of the detail Staff Member AT had proposed was therefore necessarily pared back to fit the template. I do not suggest that this constraint would have prevented the campground landslide risk from being recorded in the register at all — a suitably framed entry could no doubt have been made — but it illustrates, in a contemporaneous and practical way, precisely the limitation SM AV described: the corporate (enterprise) register is intended to hold standardised, high-level entries, and the operational register is intended to hold more detailed activity/site-specific risks with clear linkage and connection between the registers.[206] As the operational register was not operational, the CAMMS register did not include the kind of specific, asset-level hazard information that an assessment such as the WSP or HD Geo reports contained. Combined with the fact that the system depended entirely on a risk owner first recognising and recording a risk; that the operational tier had not been migrated into the system; and the campground landslide risk was never entered by anyone; meant that this hazard remained invisible to the corporate risk system and consequently to the Audit and Risk Committee - the body within TCC's organisational structure charged with exercising oversight of risks within the TCC organisation.

[426] The landslide and rockfall risks identified and described in the WSP (2023) and the HD Geo (2025) reports were never recorded on the risk register nor were they ever brought to the attention of the Audit and Risk Committee. This was not because the system lacked a rule requiring escalation. The Risk Management Policy and Risk Management Framework required that a risk assessed as *Critical* or *High* be escalated and notified to the Executive and to the Staff Member AV and be the subject of 3 monthly review by the General Manager and Strategy, Finance and Risk

[206] The corporate (enterprise) register is intended to contain high-level risks. The CAMMS system is designed to hold more detailed information, where entered by the risk owner. However, in accordance with the risk management policy and risk management framework (and in line with ISO 31000, that information should be consistent to allow the organisation to manage risk effectively. Where more detailed operational risks are entered into the system, it is designed so that these risks can be linked to higher level enterprise risk. This linkage then contributes to the evaluation of that enterprise risk and enables a 'drill down' process to determine the detail below.

Committee.[207] The Risk & Assurance team meet with all tier 2 and tier 3 managers on a quarterly basis, thereby affording them an opportunity to raise new risks and discuss existing risks. Escalation depended entirely on the individual risk owner first recognising, recording and escalating the risk through their manager, or for the manager to question their teams in relation to any risk that may be identified through their work, for entry into the CAMMS system, and for discussion with the Risk & Assurance team as appropriate. In this instance, neither appeared to have happened, and where that did not occur, nothing in the system operated to detect the omission.

[427] In this situation, where the risk had not been elevated and recorded, the internal audit and assurance function could not and did not provide a check. It comprised two auditors. Audits are selective and risk-based rather than comprehensive or annual; and the audits test only what is recorded in the risk system — so a risk that was never recorded could never be audited.

[428] TCC's corporate risk and assurance process and system, as designed and operated, was technically capable of capturing the landslide and rockfall risk to the campground. However, two professional reports identifying landslide risk into the campground and clearly having severe health and safety implications for occupants of the campground and both recommending the same mitigating control, existed within TCC's possession yet never reached the Staff Member AV or the Audit and Risk Committee.

(8) Transferring of expert geotechnical knowledge

The Avalon monitoring relationship and its handover to HD Geo

[429] From 2003 to 2022 Avalon Industrial Services Ltd (Mr Neil McHugh) carried out rockfall monitoring on Mauao and, although its brief was framed around rockfall, repeatedly identified and warned of the landslide risk to the slopes above the campground, including in its detailed 2006 risk review, which contained a quantitative fatality estimate. And in several subsequent monitoring reports Avalon repeated the

[207] The Spaces and Places Master Risk Register, also requires notification to the Tier 3 Manager of Spaces and Places, as the "relevant Senior Leadership Group member."

use of the same annotated aerial photograph to identify the historic scarp located above the amenities block that failed on 22 January.

[430] With the appointment of each successive Mauao ranger, Mr McHugh diligently provided them with a set of previous Avalon reports including those in which he had identified and quantified the risk posed by the large and historic landslide scarps immediately above the campground and Harbour Amenities block.

[431] In the later years the Avalon monitoring proceeded with no written contract, but generally on a biannual basis or as requested following an extreme weather event or rockfall incident. Although in practice this arrangement worked reasonably well, nevertheless TCC had no contractual or pre-programmed arrangement to ensure that monitoring of known hazard sites occurred at defined intervals.

[432] Following Avalon's monitoring report of August 2022, monitoring lapsed entirely for approximately two years, until Staff Member E again made contact with Mr McHugh in late 2024. During that interval, TCC had no mechanism to detect that monitoring of a known hazard site had ceased.

[433] When Mr McHugh decided Avalon would discontinue monitoring Mauao for TCC he recommended HD Geo, and proposed a managed transition in which Avalon would remain engaged alongside HD Geo to preserve continuity of nearly twenty years' institutional knowledge. TCC declined that proposal to save cost, engaging HD Geo directly and paying Mr McHugh for two crossover site visits. At this time when two decades of accumulated and invaluable site knowledge was being lost to the organisation, the handover was reduced, on cost grounds, to just two site visits.

[434] The substance of Avalon's knowledge was nonetheless transferred: on his own conscientious initiative Mr McHugh provided HD Geo with the history of Avalon's reports and, on the crossover visits, walked HD Geo's personnel to the slope above the campground that subsequently failed.

Provision of earlier geotechnical reports to inform later assessments

[435] WSP has advised that as part of the "project kick off meeting" for the Mount Maunganui Beachside Holiday Park project, it requested relevant TCC held reports relating to Mauao, and the need for such information was included in its Offer of Service. However, WSP has now become aware that multiple additional reports and investigations relating to Mauao existed and were not provided to its project team. WSP comments that had those reports been available at the time, they may have influenced WSP's understanding of the hazards, associated risks, risk ratings, and subsequent recommendations.

[436] In a similar vein, I note that HD Geo was not provided with WSP's December 2023 report when it was engaged. Had HD Geo been provided with WSP's 1 December 2023 report, it would have seen that it contained a suggestion for the establishment of a TARP for the campground as a recommended 'control' to mitigate the landslide risk, and in all likelihood HD Geo would have asked TCC whether WSP's suggestion had been implemented and if not, why not. This is another illustration of the 'silo' mentality, and the potential for adverse consequences flowing from it.

[437] Ensuring that geotechnical experts are properly equipped with all relevant information is essential, and should include not only providing information considered by the TCC staff to be relevant, but also giving them an ability to access any previous relevant reports held by TCC dealing with the area, site, or issues on which they have been engaged to provide their opinion on.

(9) Removal of trees above the campground without geotechnical assessment

[438] In 2019 a stand of large trees — three pine trees and a macrocarpa — was felled and removed from the slope of Mauao above the campground, as part of the progressive removal of exotic trees provided for in the Mauao Historic Reserve Management Plan, and undertaken for archaeological, cultural and tree-health/visitor-safety reasons. The work was carried out by an arboriculture contractor between late July and mid-August 2019, with the cost shared between the Mauao budget and the campground. It was authorised through the cultural, heritage and statutory channels — the Management Plan, the endorsement of the Joint Administration Board (Nga

Poutiriao o Mauao), and the consent process under the Reserves Act 1977. The contemporaneous TCC correspondence shows careful attention to those approvals; however, it makes no reference to the slope-stability or public-safety implications of removing well-established trees from a slope situated directly above an occupied campground.

[439] So far as I have been able to determine, no geotechnical report or assessment was obtained, at any stage, as to the effect of the tree removal on the stability of the slope above the campground. I accept ENGEO's conclusion that the 22 January 2026 landslide cannot be attributed to the tree removal, and that vegetation removal is unlikely to have materially affected slope stability compared with the extreme rainfall that preceded the event. And I make no finding that the removal of the trees caused or contributed to the 22 January 2026 landslide. I nevertheless note that the removal took place 6 years 5 months before the landslide — a period ENGEO describes as "uncomfortably within the window of instability" during which loss of root strength can elevate landslide risk — and that the removal of established trees from a slope directly above an occupied campground was a physical intervention that should not have been undertaken or approved without a geotechnical assessment of its implications for slope stability. The absence of any such assessment forms part of the broader systemic failure identified in this Review — that changes and works on and above the campground were undertaken without the known landslide hazard being taken into account contrary to the repeated advice of Dr Richards (1999) and Avalon (2006) that no earthworks or drainage works should be carried out in or above the campground without serious consideration of the potential consequences. While the cultural and heritage considerations informing the Management Plan are important and deeply significant, public safety must remain the paramount consideration where those interests come into conflict. I have made a recommendation accordingly.

(10) Overarching conclusion

[440] Across more than two decades, successive geotechnical consultants identified the landslide hazard to the campground, located it precisely — repeatedly identifying the very scarp that failed — and twice recommended the same mitigating control, a Trigger Action Response Plan, together with an updated quantitative assessment. The

hazard was known, it was precisely located, and the control that would have informed a prudent and considered response to it was identified, available and was inexpensive. What was absent was an organisational system to own a cross-boundary risk to life, to escalate it, and to record, track, and close out the consultants' recommendations and ensure that they were acted upon. Had that system existed, the recommended control would have been in place; and had the control been in place, a precautionary evacuation of the most exposed areas of the campground would have occurred. The failure was systemic, and it is addressed by the recommendations that follow.

06

Recommendations

RECOMMENDATIONS

[A] SYSTEMIC RECOMMENDATIONS

1. *Single, accountable ownership of every risk to life*

[441] Every identified natural-hazard risk to life should have a single, named TCC staff member accountable for its management, recorded, confirmed in writing and acknowledged. Where responsibility crosses internal administrative boundaries — as the landslide hazard to Mauao and campground users did — ownership should be assigned deliberately and explicitly, not left to be inferred by staff on either side of the administrative boundary. The owner's accountability should not be capable of being discharged by unilaterally forwarding a document or referring the matter to a meeting, without the prior express written approval of the person who assigned the task.

[442] Where carriage of a safety-related risk or recommendation passes from one staff member or team to another, the transfer should be effected by an explicit, written handover identifying what is transferred, to whom, and what action is required, and then formally acknowledged in writing by the recipient. The practice of relaying a report or communication without instruction — which on 11 November 2025 each party understood differently — should be replaced by a recorded transfer with confirmed acceptance.

[443] No asset or portfolio carrying known natural-hazard or other material safety risks should be transferred between managers, whether on restructure or otherwise, without a documented handover recording the known risks, the outstanding recommendations of any expert reports, the relevant reports and any response plans, formally acknowledged as received by the transferee manager. Any organisational restructuring should treat continuity of risk knowledge as a required deliverable, especially where experienced staff are departing TCC's employment.

[444] TCC should establish an electronic template for recording the allocation and ownership of each natural hazard posing a risk to life, any transfer of ownership of that risk, and the assignment of specific risk-management tasks, together with acknowledgement by the transferee or assignee. The template should create a

comprehensive, readily auditable, real-time record within a central electronic register documenting the ownership and management of the risk.

[445] When TCC changes consultants, for example such as was the case when it engaged HD Geo in place of long-time geotechnical consultant Avalon, it should wherever possible ensure that the consultant to consultant handover is carried out so as to involve an effective transfer of the accumulated information derived by the outgoing consultant from their work for the Council to the incoming consultant, so as to avoid the loss of the acquired knowledge held by the retiring/departing consultant.

2. ***Mandatory recording, escalation and close-out of identified risks to life***

[446] Every natural-hazard risk to life must be recorded in the risk-management system with sufficient specificity to enable it to be readily identified, assessed, mitigated and monitored. A generic entry (such as 'falling rock/landslide') without further detail is insufficient. Where a site register already rates such a risk as High or Critical, the escalation its own rating requires must in fact occur.

[447] Any expert report or internal assessment identifying a risk to life — or employing defined indicators of serious risk, such as a recommendation to evacuate, exclude or relocate, or a high or intolerable rating — should be notified, within a specified period and irrespective of the recipient's own view of urgency, to the relevant General Manager and the Chief Executive, and upon receipt automatically forwarded to the Manager, Risk and Assurance to be noted and triaged for reference to appropriately qualified or experienced staff. The requirement should operate independently of individual discretion and of personal task-lists or one-to-one meetings.

[448] Every recommendation in a commissioned expert report concerning a risk to public or worker safety should, on receipt, be entered in a register against the report and the asset; assigned to the accountable owner; given a status and review date; and formally dispositioned as implemented, declined or deferred, creating an auditable record to follow. Resolution should require evidence that the control is in place, or a

recorded decision — taken above the operational level, with reasons — that it will not be. Silent non-action should be impossible.

3. *A central register of geotechnical and natural-hazard reports*

[449] TCC should maintain a single, authoritative and searchable electronic register of all geotechnical and natural-hazard reports, into which every such report must be lodged regardless of the commissioning team, and which automatically brings each report to the attention of the staff member(s) accountable for the asset or location it concerns. Reports relating to a given site should be reliably retrievable and readable together, and accessible to the next geo-technical consultant, so that successive assessments build upon those made before them.

4. *Notification where one team commissions safety-related work concerning another team's asset*

[450] Where a report or assessment bearing on a risk to public or worker safety is commissioned, received or paid for by one team but concerns an asset, site or activity for which another team is responsible, its existence must be notified as a matter of course to the manager accountable for that asset, independently of which team or budget bears the cost. TCC should not rely on financial reporting or expenditure oversight to bring such work to the attention of the responsible manager. As the WSP report demonstrated, where the commissioning team meets the cost from its own budget, the report generates no financial record within the responsible team and may remain invisible to its management. The notification obligation should attach to the subject-matter of the report — the asset or location it concerns — and not to the team that happens to have commissioned or funded it.

5. *Quantitative and societal risk assessment against defined tolerability criteria*

[451] Where a natural-hazard assessment identifies a credible risk to life at a populated site, TCC should commission a site-specific quantitative risk assessment, using an established methodology assessing both individual risk (as an annual probability of loss of life) and societal risk, against predetermined tolerable-risk criteria. Where a qualitative assessment yields a Medium or higher rating, the further

(secondary) analysis required by the applicable framework must be completed. A conservative 'first-pass' estimate should be made promptly — the absence of complete population or site data is not a reason to defer it.

[452] For a site at which numbers of people are concentrated in proximity to the hazard — a campground, holiday park, marae, school camp or comparable facility — the assessment must evaluate societal risk (the risk of multiple fatalities in a single event) in addition to individual risk. TCC should recognise that a site may present an acceptable individual risk yet an intolerable societal risk, and that for densely-occupied sites the societal measure should ordinarily govern the response.

[453] Briefs and reports for assessments of risk to life must require the consultant not only to estimate the risk but also to complete the risk-evaluation step —and stating their opinion as to whether the assessed risk is tolerable against defined criteria, whether risk reduction or active management is required, and if so within what timeframe. And where a consultant's recommendations are described as being options, or suggestions, TCC must not treat that as being a reason to defer further assessment and consideration of the recommended measures.

6. *Independent commissioning of safety assessments, and engagement of TCC's own expertise*

[454] An assessment of a risk to life should be commissioned and conducted so as to establish the nature and extent of the risk independently of, and prior to, any consideration of whether the proposed mitigation is culturally, operationally or financially feasible. Instructions to a consultant should not frame the scope of the assessment by reference to the acceptability or convenience of its possible findings. Briefs for safety-critical assessments should be reviewed and approved by a senior TCC staff member independent of any operational or commercial interest in the outcome before they are issued.

[455] Where TCC holds relevant in-house expertise (such as a natural-hazard specialist), that expertise must be engaged in the identification, assessment and management of natural-hazard risks to life, and in the evaluation of any external

consultant's report concerning such a risk. TCC should ensure, by a defined process: that the existence and role of any such specialist is known across the organisation; that every safety-critical natural-hazard report is referred to that specialist (or a suitably qualified independent person) on receipt; and that the specialist's assessment of the nature and tolerability of the risk, and of the action required, is recorded against the report and carried into the risk register and escalation process.

7. *Trigger Action Response Plans and frontline capability for populated sites*

[456] For every populated site controlled by TCC, exposed to a natural-hazard risk to life assessed as Medium or higher, TCC should require — not merely consider — the development and maintenance of a Trigger Action Response Plan. The TARP should: be capable of immediate implementation in a simple initial form (for example, staged evacuation of defined runout zones when rainfall exceeds a defined return-interval threshold over a defined duration), and be refined over time as a living document; link specific, observable or measurable triggers — defined rainfall thresholds, antecedent soil-moisture, and visible signs such as turbid water from the toe of a slope, tension cracking, bulging or changes in seepage — to specific, staged actions up to and including full evacuation; empower designated site personnel to act on a trigger immediately, without needing approval from someone higher in the TCC organisation; identify who holds each responsibility and the communication and escalation protocol; and recognise that evacuation/avoidance is a higher-order control than engineered consequence-reduction. The TARP recommended in 2023 and 2025, and offered by HD Geo in November 2025, should be completed and maintained.

[457] TCC should designate in advance, for the campground and any comparable TCC sites, who holds authority to order a precautionary evacuation or partial closure, how the decision is made and recorded, and how it can be made at any hour and in the absence of the usual manager — by reference to the TARP triggers rather than the unaided judgement of whoever is on site. A concern raised by staff or by a member of the public should be required to be referred to that decision-maker and addressed immediately.

[458] Staff at the campground and comparable TCC sites should be trained to recognise the observable precursors of slope failure — in particular turbid or muddy water from the toe of a slope, tension cracking, bulging, and changes in seepage or spring behaviour — and instructed, through the TARP, as to the actions to take and the persons to notify. Training should be recorded and periodically refreshed, as for other health-and-safety training.

8. *Contracted, scheduled monitoring of known hazard sites, with independent assurance*

[459] Monitoring of an identified natural-hazard site presenting a risk to life should be conducted under a standing written contract specifying scope (expressly including both rockfall and landslide hazards where relevant), frequency and reporting, with a mechanism by which a missed monitoring cycle is automatically detected and flagged to the accountable risk owner. Monitoring should not depend on the availability of a single individual or proceed on a goodwill basis. Any transfer of the monitoring role should be a documented, adequately-resourced handover preserving the full record and site knowledge, with the cost assessed against the gravity of the risk — not treated as a discretionary saving.

[460] TCC should provide for periodic independent assurance — internal audit or a dedicated safety-assurance function — that samples the natural-hazard risk register and the record of expert report recommendations and confirms that identified risks to life have an accountable owner, that recommended controls have been implemented or formally dispositioned, and that open items are genuinely progressing. Such assurance would have detected, before 22 January 2026, that a control recommended in 2023 and again in 2025 remained neither implemented nor declined.

9. *Geotechnical assessment before physical works on or above populated areas*

[461] TCC should adopt a standing requirement that no vegetation clearance or removal of established trees, earthworks, drainage or excavation works, or other physical modification, may be undertaken or approved on a slope above — or otherwise capable of affecting the stability of a slope above — a campground or other

populated area, unless a geotechnical assessment of the effect of the proposed works on slope stability and on the safety of persons below has first been obtained and considered.

[462] The requirement should apply irrespective of the purpose of the works (including amenity, ecological, cultural, heritage, fire-risk or tree-health reasons), and irrespective of which team or external partner initiates them.

[463] Where works are proposed on Mauao or another site administered jointly with, or of significance to, mana whenua, the geotechnical assessment should form part of the approval process alongside the cultural, archaeological and statutory approvals (including any Reserves Act 1977 consent and the applicable reserve management plan), so that slope-stability and public-safety implications are weighed together with all other relevant considerations.

[464] The assessment made, and the decision taken, should be recorded against the asset in the central register, and any resulting change in the assessed risk entered in the risk register and, where it engages a risk to life, escalated accordingly.

10. *Enhanced co-ordination and management of the campground/Mauao geohazard interface*

[465] While a legal and administrative boundary exists between the mountain and the campground, the two are inseparable as regards the risk of geohazards and particularly the risk of landslides which have the potential to flow down from the slopes of Mauao into the campground. For many years geotechnical reports have been obtained by the TCC Mauao Rangers for the purposes of their work responsibilities in relation to Mauao, which nevertheless contained information about the identification of geohazards having the potential of affecting the campground and endangering its occupants. The reports prepared by Avalon's Neil McHugh are the obvious example. While Avalon was initially engaged to monitor and mitigate the risk from rockfall, following the May 2005 rainfall and landslide event Mr McHugh realised that while rockfall presented a serious risk to members of the public using the walking tracks,

the risk presented by landslides entering the campground was considerably more significant.

[466] As I have earlier noted (but shall repeat here for the purposes of providing context), in Avalon's July 2005 report titled: *Mauao Slopes 2005; Zone 6 - Southern campground and hot pools – Rockfall hazard & risk assessment*, Mr McHugh said:[208]

> Photograph 6 indicates historical circular mass slips in the colluvial slopes immediately above the campground (others are also present). These events appear likely to have been over five times larger than the 18th May 2005 slip on the south western slopes and probably released a fast liquified debris flow.
>
> Should such an event now occur above the campground the consequences could be extremely serious.

[467] And in Avalon's report titled *Mauao Slopes: May 2006 – Rockfall & Landslide Risk Review 2006* (dated 17 July 2006), Mr McHugh said:[209]

> **Landslip**
>
> Landslip hazard was briefly considered some years ago and was evaluated as a low risk. The May 2005 flood event included one large slip on Mauao's lower South West slopes which prompted Avalon to re-examine the potential for slips.
>
> Mauao's lower slopes form an almost continuous series of slip scars, some of which would have very large debris flows into what is now the campground.
>
> The May 2005 flood was (approximately) a 1 in 100 year event. A very preliminary assessment shows that if a similar slip occurs with this frequency **then slips may represent a greater threat to the campground than rockfall.** (emphasis added)

[468] As Mr McHugh's comments demonstrate, because of their shared boundary, it never made any sense for TCC to treat the campground and Mauao separately in relation to geotechnical issues common to both. Landslides and slope failures occurring on Mauao along and above the common boundary with the campground plainly pose a risk not only to the walking tracks but also to the campground.

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208 Doc 33540
209 Doc 32741

[469] Accordingly, any reports addressing geohazards on Mauao along and above the common boundary with the campground should, as a matter of course, also be provided to campground management. The engagement of geotechnical consultants should likewise be co-ordinated between the campground and Mauao management teams to ensure that the interests of both are considered and both are informed of the consultants' findings and recommendations.

[B] RECOMMENDATIONS DIRECTED TO EMERGENCY RESPONSE AND ON-THE-GROUND WARNING

[470] Field reports of slope failure in occupied areas must be triaged as a geohazard, not only a welfare issue. Any report — however received — that slope failure, slipping or debris is occurring in or entering an occupied area should trigger immediate notification to a designated staff member responsible for slope-hazard assessment, in addition to any welfare response, so that the question of evacuation is actively considered by someone competent to consider it. A welfare contact establishing that occupants are uninjured and able to shelter in place should not, of itself, close out a report of active slope failure.

[471] Consistent treatment across the city during an emergency. During a declared state of emergency, the EOC should ensure that reports of rainfall-induced slope failure affecting occupied locations are assessed against a consistent standard, whether the location is a residence, a public track, or a campground, so that like hazards receive like consideration.

[472] Occupants of sites and buildings at the foot of slopes must be expressly considered in evacuation planning — not only track users and the protection of assets. A decision to close tracks or restrict public access because of slope-failure risk should automatically prompt consideration of whether occupants below the same slope require relocation.

[473] Warnings raised by members of the public should be captured, escalated and acted upon as hazard intelligence, not treated only as service requests or welfare contacts, so that a member of the public reporting an emerging danger can have the report reach a person competent to assess it.

[474] Contactability of campground management during an emergency. During a declared emergency or severe-weather warning affecting the campground, there should be a reliable and monitored means by which occupants and the EOC can make immediate contact with campground management, and by which management can be alerted to reports received through TCC’s other channels.

[C] IMPLEMENTATION

[475] TCC should prepare a detailed and prescriptive manual (or memorandum) containing standing instructions to staff, setting out the processes to be followed to give effect to the recommendations in this report, so that they are embedded in everyday practice rather than left to individual initiative. This could include electronic templates of documents to be readily accessed and which are required to be used by staff when communicating with other staff regarding the 'ownership' and transfers of responsibility for risks.

Final thoughts

[476] Six people lost their lives in the landslide of 22 January 2026: Lisa Maclennan, Susan Knowles, Jacqualine Wheeler, Måns Bernhardsson, Sharon Maccanico and Max Furse-Kee. They had come to Mauao to do what thousands of New Zealanders do each summer - to camp, in a spectacular setting beside the ocean beach, and beneath a mountain of great beauty and cultural significance, trusting that they would be safe there, and if any natural hazard risk arose, that they would be warned about it and protected by those in charge of the campground with responsibility for their safety. Nothing in this report should be allowed to obscure that.

[477] The central conclusion of this Review is sobering in its simplicity. This was not a hazard that was unknown, hidden, or beyond the reach of foresight. For more than two decades, one competent consultant after another identified the landslide hazard to the campground, located it on the very slope that failed, and explained - sometimes in stark terms - what the consequences of a landslide occurring could be. As long ago as 1999, Dr Laurie Richards warned that the siting of fragile holiday accommodation directly beneath these slopes was imprudent and that the risk to sleeping occupants was high. In 2006 Avalon went further, estimating in plain numbers that a debris flow of the kind that had happened before would place some thirty people in its path and kill twenty-one. The same warning, and the same precisely-marked aerial photograph of the historic scarp above the Harbour Amenities building, was repeated again and again over the years that followed. And experience had repeatedly demonstrated that high levels of extended rainfall increased the likelihood of landslips

occurring, and extremely high levels of extended heavy rainfall increased the risk of large scale landslides occurring.

[478] In late 2023 and again in mid 2025 an effective means of mitigating the risk - a Trigger Action Response Plan which would clearly describe rainfall levels and identifiable precursor signs of slope failure and require an urgent evacuation of an area found and known to be susceptible to landslide occurring - was recommended, and not acted on. The knowledge was there. The means of reducing the risk of a landslide tragedy occurring was identified, available, and relatively inexpensive to implement.

[479] What was missing was not knowledge, but an organisation able to hold, assess, and act on it. The geohazard sat at the administrative and legal boundary that exists between the mountain and the campground, and responsibility for the landslide risk fell somewhere between the TCC teams responsible for each. No single person within the TCC organisation 'owned' it. No system mandatorily required the risk to be recorded, escalated, tracked, with written confirmation that the appropriate risk mitigation measures had been put in place. Reports identifying a risk to life were received, filed, discussed, forwarded - and then left. The corporate (enterprise) risk register which is intended to hold standardised, high-level entries did not contain site-specific hazard information; the operational register which is intended to hold more detailed activity/site specific risks (with clear linkage and connection between the registers) was not operational, and although the system could nevertheless have recorded a site-specific risk by means of a link to the register, in the case of the Holiday Park no site-specific landslide risk had ever been reported and escalated, and so there was no central record of the landslide risk at the campground and the TCC Committee charged with oversight of health and safety risks within the organisation never saw it. Successive restructures dispersed the people who held the institutional memory, and continuity of that invaluable knowledge was treated as expendable. Time and again the recommended measures or controls were scoped out or simply not actioned. The failure was not the fault of any one person; it was the failure of a system that enabled an identified risk to life to remain unowned, un-escalated and unmanaged.

[480] On the morning of 22 January these systemic flaws combined and compounded. Warnings came early and from several directions - from the intense

rainfall, from the Maclennans before five o'clock in the morning, from the large slips already coming down around the mountain, from the several smaller slips on the slope directly above the Harbour Amenities block and from the muddy water streaming from the foot of the slope above the Harbour Amenities block for several hours before the slope finally failed. The instinct to move people away from the toe of the slope was even voiced by some of those who observed these signs, but there was no plan against which to assess those warnings, no threshold criteria requiring action, and no training of staff enabling them to recognise observable signs which indicated an elevated risk of slope failure, and no one charged with making a properly informed evacuation decision. The most consequential safety decision of that morning was left, by default, to the manager at the campground who had been given neither the tools nor the knowledge to make it. In my view the criticism justly and appropriately lies with the organisation that left the campground manager and his staff so ill-equipped and unprepared to make the decisions that could have avoided this tragedy.

[481] Had a Trigger Action Response Plan of the kind twice recommended been in place, the position that morning would have been very different. Such a plan would not have depended on anyone reading the slope correctly in the moment. Its rainfall trigger would likely have been engaged overnight, by rainfall that was the heaviest in some twenty years; and if not, independently by its second trigger — the prolific and very obvious discharge of muddy water from the toe of the slope, observable for several hours before the eventual slope failure — would have required the same response. Either *trigger* on their own would have called for at least the precautionary evacuation and exclusion of the campsites and the Harbour Amenities block at the toe of the slope. Had those areas been evacuated and kept clear, as such a plan would have required, the people who lost their lives would not have been within the path of the landslide when the slope failed. To that extent, and in that sense, the loss of life could in all likelihood have been averted.

[482] It is important to be clear about what this Review does not find. It does not find that any individual did anything intentionally or deliberately wrong, or that any one or more persons' acts or omissions caused these tragic deaths. It does not find that the removal of trees in 2019 caused the landslide. And, consistent with the Terms of Reference, it makes no finding as to civil, criminal or disciplinary liability, nor any

findings as to the conduct of the emergency response after the landslide had occurred. Those TCC staff and members of the public alike, who ran towards the danger, and searched desperately for those who were trapped, deserve to be acknowledged and commended for their bravery and selfless humanity.

[483] What this Review does find is that this tragedy was, in the end, preventable. I do not mean by that that anyone could have known that this slope would fail at this moment, on this particular morning — no one could. I mean something more deeply troubling: that the hazard was known, that an effective and inexpensive means of managing the risk it posed had twice been recommended, and that the Council had every opportunity to put it in place. Had it done so, the most consequential decision of 22 January — whether to move people away from the foot of the slope — would not have been left to the unaided judgement of whoever happened to be on site that morning. It would have been made in advance, against defined criteria that the readily observable conditions of that day would plainly have met. What was required was not extraordinary foresight. It was the robust operational processes and discipline required of a well-run organisation: that a known risk to life be owned by someone, recorded, escalated, and followed through until an effective means of mitigating it was in place, and that those left in charge of the campground were equipped to recognise the danger, and ready to act quickly and effectively if ever required.

[484] The recommendations I have made are directed to building that discipline — single, accountable ownership of every risk to life, including those that cross internal administrative and organisational boundaries; the mandatory recording, escalation and tracking of expert advice; a central register of geotechnical and natural-hazard reports and the preservation of hard-won knowledge through restructures and handovers; the quantitative assessment of both individual and societal risk against defined tolerability criteria; independent commissioning of safety assessments and the engagement of the Council's own specialist expertise; the development and maintenance of Trigger Action Response Plans for populated sites; contracted, scheduled monitoring of known hazard sites; geotechnical assessment before physical works are undertaken on or above populated areas; enhanced co-ordination and management of the campground / Mauao geohazard interface; and independent assurance that risks identified are risks in fact managed. None of these is novel, costly, or burdensome. Each addresses a

failure this Review has identified. I suggest that they be read not as a catalogue of criticism, but as the practical steps by which to ensure what happened here cannot happen again.

[485] Mauao is a revered taonga, a sacred maunga, a place of belonging, of healing, and of inspiration for the people of Tauranga Moana, and for the many who are privileged to visit it and who hold and treat it with respect. It will always be so. But the events of 22 January 2026 have shown, at the most heartbreaking cost, that reverence for the mountain and responsibility for those who climb it or gather at its foot must go hand in hand. While the law draws a boundary between the reserve and the campground, the mountain recognises no such line, and neither does the landslide risk that lies within its slopes. If the recommendations of this Review are acted upon, they will materially reduce the chance of such a tragedy ever occurring again. That is the very least that is owed — to Lisa Maclennan, Susan Knowles, Jacqualine Wheeler, Måns Bernhardsson, Sharon Maccanico and Max Furse-Kee, who came to Mauao to enjoy a beachside summer holiday, and did not return home to their families who must now live with their loss and the ever-present reality of their grief, that no report, and no reform, and no words can ever change or relieve. It is to them and to those who lost their lives, and in their memory, that I respectfully commend the changes this Review calls for.

Hon. Paul Davison KSO KC

07

Appendix One: Terms of Reference

Confidential and legally privileged

Terms of Reference

External Review into the Mount Maunganui Beachside Holiday Park Landslide - Tauranga City Council

Background

Overnight on Wednesday 21 January/Thursday 22 January more than two months of rain fell within 12 hours in the Bay of Plenty.

At around 12:42pm on 21 January, Bay of Plenty Civil Defence Emergency Management, with the support of the Mayor of Tauranga, declared a state of emergency, in response to a red heavy rain warning for the region, and the Tauranga City Council stood up its Emergency Operations Centre to co-ordinate Council's response to events.

At approximately 9.30am on 22 January 2026, a landslide occurred on the south-eastern slopes of Mauao, tragically resulting in the death of six individuals at the Mount Maunganui Beachside Holiday Park. Emergency services were involved in responding to the landslide, and over the following days located and recovered the bodies of the six victims.

This event, including Tauranga City Council's role in it, is likely to be the subject of various investigations and reviews, including ongoing investigations by the Coroner and Police, as well as a potential public or Government inquiry, and potential investigation by Worksafe.

The Tauranga City Council Mayor and Councillors have decided to commission an external review of the actions of Tauranga City Council and the Emergency Operations Centre in relation to the land area affected by the landslide (the affected area), to provide a clear factual account of events and an independent assessment of whether other actions could or should have been taken.

This review aims to provide transparency to the families of victims and to the broader community, provide assistance to other investigations that may take place; and allow Tauranga City Council and other local authorities to learn from what took place, in order to avoid similar tragedies occurring in the future.

Purpose of the Review

The purpose of the review is to:

- Establish an independent, clear, and accurate understanding of the relevant facts and events leading up to the Mauao landslide on 22 January 2026, and in particular, the time between the declaration of the state of emergency and the time of the landslide; and
- Assess whether Tauranga City Council and the Emergency Operations Centre took appropriate and timely steps in relation to managing the risk of landslide in the affected area; and
- Identify any lessons that may assist the Council governance and organisation, and other local authorities in preventing or responding to risks of similar events in future.
- Enable the Council to address any potential consequences.

Reviewer

Hon. Paul Davison KC has been engaged to review the events, in accordance with these Terms of Reference.

The reviewer is to act independently of Tauranga City Council in carrying out this review. The reviewer will confirm no conflict of interest.

Scope

The reviewer will review and report on:

- the relevant facts and circumstances that led to the landslide on 22 January;
- what was known by Tauranga City Council about the area of land on Mauao affected by the landslide (the affected area), how the Council identified, assessed and managed any risks prior to the state of emergency;
- the information received and decisions and actions taken by Tauranga City Council and the Emergency Operations Centre in relation to the affected area during the state of emergency;
- whether Tauranga City Council and the Emergency Operations Centre took appropriate and timely steps in relation to managing hazards associated with the risk of landslide in the affected area;
- whether there were any other actions that Tauranga City Council and the Emergency Operations Centre could have taken to reduce the risk of harm from landslide in the affected area;
- actions that Tauranga City Council took in the immediate aftermath of the landslide – until FENZ took operational control of the affected area.

The reviewer will make recommendations of any steps or systemic improvements that may assist the Council in preventing or responding to similar future events. Without limitation, this will include recommendations regarding:

- Governance, stewardship and decision-making arrangements relevant to the affected area on Mauao, including the respective roles of elected members, management and external advisors;
- Identification, assessment, monitoring and management of risk, including geotechnical, environmental and public safety risks;
- Policies, plans, processes and practices relevant to land stability, access, asset management, monitoring and hazard mitigation;
- Information, advice and assurance, including the use of expert reports, internal reporting, escalation and record-keeping;

- Operational controls and interventions, including access management, works, monitoring activities and responses to identified risks;
- Communications and engagement, including with elected members, statutory partners, mana whenua (where relevant to process), stakeholders and the public;
- Preparedness arrangements immediately prior to the landslide.

The review will not make findings or recommendations regarding:

- the actions of bodies other than Tauranga City Council and the Emergency Operations Centre, except to the extent they are relevant to the actions and decisions of Tauranga City Council;
- any actions relating to the emergency response to the landslide after it occurred;
- civil, criminal or disciplinary liability of any person.

If, during the course of the review, the reviewer becomes aware of any other matters that fall outside the scope of these terms of reference, which the reviewer considers should also be reviewed, he will notify the Mayor, who will determine whether to expand the scope of the review to include those matters.

Approach

The reviewer will conduct the review:

- independently and impartiality;
- in accordance with the principles of natural justice;
- considering the interests and respecting the families of the victims of the landslide;
- in a manner that does not interfere with ongoing support or recovery activities;
- with due regard to the confidentiality, privacy and other interests of natural persons and third parties.

The reviewer may engage independent experts as required to assist with the review.

Cooperation and process

Tauranga City Council will cooperate fully with the review.

A nominated contact person within Tauranga City Council will be confirmed, to assist in making arrangements and accessing documents.

The review will involve a review of documents, together with interviews, if and as the reviewer considers necessary.

Tauranga City Council will provide the reviewer with, in the first instance:

- All geotechnical and other reviews relating to the risk of slips on Mauao;

- All relevant documents and correspondence relating to actions taken or decisions made in response to those reviews;
- Logs from the TCC contact centre and Tauranga Transport Operations Centre (TTOC);
- Logs from the EOC;
- All communications, statements, photographs and/or video images held by the Council and its staff relating to the events on 21/22 January 2026.

Tauranga City Council will also provide the reviewer with any other documentation and/or information that the reviewer considers relevant to the scope of the review, subject to legal and privacy obligations.

The reviewer may receive information from and interview any person he considers may be able to provide relevant information within the scope of the review. Interviewees employed by or contracted to Tauranga City Council are expected to co-operate with the review and attend interviews as soon as is reasonably practical following a request by the reviewer.

The reviewer will consider any interviewee's request for specific confidentiality arrangements, as required.

Report

The reviewer will provide the Mayor with a final written report addressing the matters in scope.

If the report contains confidential or private information, the reviewer will provide a summary report suitable for public release. The Mayor is responsible for decisions about the manner and timing of the report publication.

The full report will be made available to assist in any other investigation or inquiry into the event, including any public or government inquiry and inquiries by the responsible Coroner and the NZ Police.

Timeframe

The reviewer will deliver the final report by 30 June 2026, unless otherwise agreed with the Mayor.

08

Appendix Two: Diagrams and Photographs

a Holiday park information sheet



b **Aerial photograph from Avalon's reports**



C Aerial photographs of the Landslide





d **Photograph taken by Lisa Maclennan 22 January 2026 at 6:17 am**



e **Photograph taken by Colin McGonagle 22 January 2026 at 7:41 am**



Photograph taken by Colin McGonagle 22 January 2026 at 7:42 am





g Photograph taken by Lisa Maclenann 22 January 2026 at 8:01 am



h **Photograph taken by Lisa Maclennan 22 January 2026 at 8:08 am[1]**



1. Note: For privacy reasons, this photograph has been edited to redact the image of a person walking on the sealed driveway

09

Appendix Three: ENGEO Geo-Technical Review Report

29 July 2026

Hon Paul Davison KC
via email

Dear Sir,

Geotechnical Review, Mt Maunganui Landslide

(Our Reference: 31075.000.001_05)

1 Introduction and Scope of Work

This report addresses matters of geotechnical concern that form part of your external review for Tauranga City Council (TCC) into the fatal Mt Maunganui (Mauao) Landslide of 22 January 2026. It has been carried out in accordance with our signed agreement dated 22 April 2026. As outlined in your email of 13 April 2026 and our subsequent discussions the elements of concern are as follows:

(1) The extent to which potential precursors to rapid landslide movement could have been identified and interpreted immediately prior to failure.

(2) Possible effects of historic devegetation and water pipes on slope stability.

(3) You have also sought advice on the development of an appropriate Trigger Action Response Plan (TARP).

2 Background

2.1 January 2026 Rainfall Events

On Thursday 15 January 2026, a large low-pressure system arrived in New Zealand, causing heavy rain in the central and northern regions of the North Island, including the wider Tauranga Area. The Bay of Plenty was under an orange heavy rain warning from 9:00 am on Thursday 14 January to 10:00 am on Friday 16 January.

While this was a more modest event compared to the storm that occurred a few days later, it would have had the effect of raising water content in the near surface soils, in what is termed the ‘antecedent soil moisture condition’. The importance of this is outlined in Section 5.

A tropical low was forecast to approach New Zealand from the north on Wednesday 21 January 2026. Heavy rain, downpours and easterly gales were expected to affect many areas (BOPRC, 2026). A red heavy rain warning was in force for the Bay of Plenty from 9:00 am Wednesday 21 January to 9:00 am Thursday 22 January. This warning predicted 180 to 240 mm of rainfall during this period, further to what had already occurred in the day prior.

As outlined in the BOPRC report, MetService's Tauranga Airport AWS rain gauge recorded approximately 290 mm in the 24-hour period to 5 am on 22 January, with 315 mm recorded in the 48-hour period to 6 am on 22 January. Rainfall depths in both event durations are greater than the 1% Annual Exceedance Probability (AEP)[1] (or 1 in 100-year Average Recurrence Interval, ARI) with the 24-hour event close to a 0.5% AEP (1 in 200 ARI). The rainfall event was characterised by higher ARIs for longer duration periods, indicating sustained precipitation over several days rather than briefer episodes of high intensity rainfall (BOPC, 2026).

2.2 Landslide Event of 22 January 2026

The fatal landslide occurred around 9.30 am on Thursday 22 January 2026, some hours after rain ceased. The landslide and its effects are described in WSP (2026), but in summary:

- Prior to the failure, significant groundwater seepages were noted at the base of Mauao emitting from the historically cut banks adjacent to the holiday park. Sediment laden water and small debris flows were also apparent based on media photographs and photographs supplied to us which were taken by campground residents.
- Small scale failures were also noted by campground residents, in particular, Mr and Mrs Maclennan, who we understand had their camper van parked at the toe of the Mauao hillslope.
- WSP (2026) indicate that media images show a small (up to 5 m high and 20 m wide) toe failure within a cut bank immediately prior to the main failure with large amounts of water and sediments flowing through the Holiday Park, although it is not clear that this was in the area where the landslide occurred.
- The headscarp of the landslide that led to the fatalities was at about 30 m asl[2]; while the campground is situated between 3 and 5 m asl. The volume was estimated by WSP (2026) at around 10,000 m^3, inundating an area of approximately 4,100 m^2.
- Based on aerial imagery, the landslide produced a scarp approximately 40 m wide and 20 m high, with the debris running out approximately 125 m from the top of the head scarp. The runout, or F-angle[3] measured on Figure 6 of WSP (2026) at approximately 15° (1H to 3.7V).
- The landslide appears to be a reactivation of part of the northern one of two historic landslides that were recognised on the slopes above the campground by Avalon (2006), WSP (2023) and HD Geo (2025).

In addition, we note that an overland flow path is shown on the TCC District Plan GIS (Figure 1) which suggests that concentrated stormwater runoff during and following heavy rainfall events is likely to occur through or close to the area where the fatal landslide occurred (approximate location outlined by the yellow polygon).

[1] According to Earth Sciences High Intensity Rainfall Design System (HIRDS) considering historical data
[2] Metres above sea level
[3] The angle between the head of the landslide and the toe of the debris.

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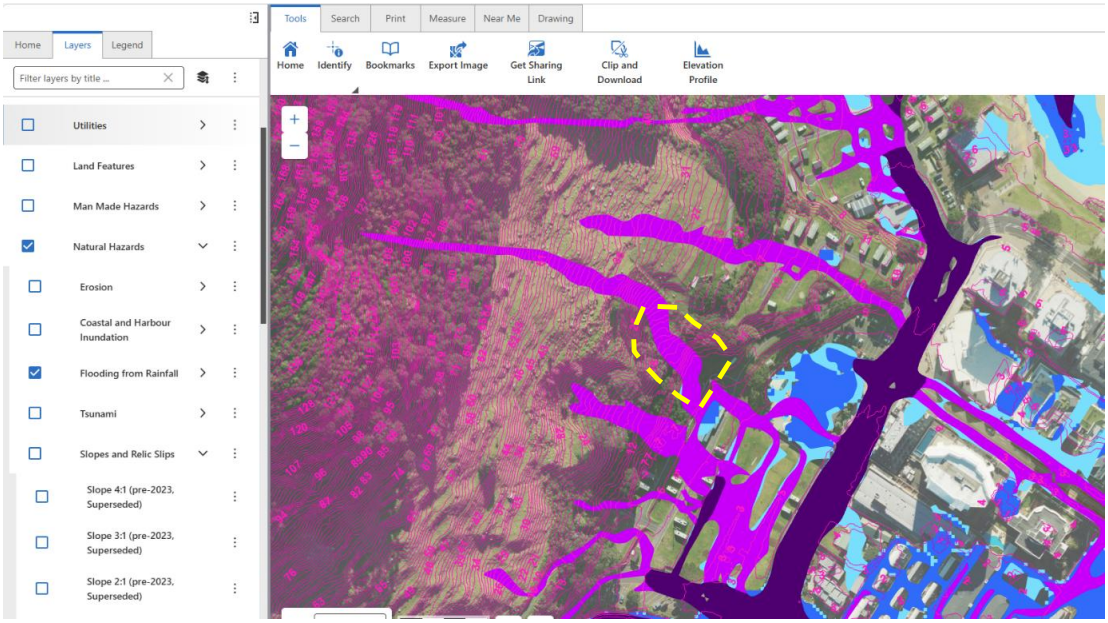

Figure 1: Overland flow paths shown in TCC GIS Database (Mapi). The purple polygons are described as 'minor overland flow paths' under the 1%AEP at year 2130 RCP8.5 median climate change scenario. Approximate area of the 22 January landslide shown in yellow.

3 Precursors to Rapid Landslide Movement

We have reviewed available photos, videos, eyewitness descriptions and timing information to identify possible indicators of changing slope conditions in the hours preceding failure. In this assessment, we have attempted to describe what someone (being a TCC staff member) familiar with the content of HD Geo's (2025) and WSP's (2023) geohazard reports could have been able to readily recognise at the time. While neither report describes precursor landslide events (and it was unlikely that this was part of their scope), both point to the presence of historical landslides on the slopes above the campground and we therefore assume that a person familiar with the reports would have some level of raised awareness.

3.1 Groundwater and Overland Flow

Flowing water appearing on, or at the toe of a slope is a strong precursor of rapid landslide movement: water reduces effective stress and soil strength, increases pore pressure, and adds weight — all of which push a slope toward sudden failure. Both turbid and clear flowing water was observed at the toe of the slope in the hours prior to the landslide occurring, with the turbid water suggesting subsurface or surface erosion at some point up-flow. This is shown in many photographs and videos made available to us (Figure 2 as an example).

Although flowing water is a clear precursor, the heavy rainfall in the preceding days likely meant it was present in many areas, including locations where no landslides occurred. This may have made it less useful as a distinct warning sign of imminent slope failure.

However, having stated this, we would expect that a person familiar with the site history would have had some concern – after all, there was clearly some level of concern by the campground occupants, evidenced by the fact that several photographs and videos were recorded.

3.2 Small Scale Landsliding

The occurrence of small-scale landslides in the hours before larger scale rapid movement occurs is well documented. These failures can occur at the toe of landslides, because of oversteepening due to internal, plastic[4] deformation within the slide mass. At least two examples of these small-scale failures were apparent in the photographs supplied to us (Figures 2 and 3), but we understand that perhaps there were four of these events in total.

We understand that prior to daylight, the Maclennan's camper van was also impacted by a small landslide, suggesting that these precursors may have been occurring over a period of many hours.

While small scale landslides are strong precursor evidence, they were unlikely to have occurred solely at the toe of the landslide that failed at 9.30 am: they probably occurred at many other locations. We therefore suggest that even TCC staff familiar with site history and reports, unless they had specific geotechnical training, may not have had the ability to recognise the small-scale failures at the location of the fatal landslide for what they were: their significance may have been lost in the 'noise' of the other landslides that were occurring on Mauao during the same rainfall event.



Figure 2: View of toe of landslide prior to evacuative failure[5]. In addition to the saturated ground and evidence of flow from the toe, two small scale landslides are observable (arrowed). Photo taken by Mr Travis Maclennan at 6.17 am. The blue pipe visible on the right-hand side of the photograph is a water main for firefighting purposes and is discussed in Section 4.2.

[4] As opposed to brittle deformation, which occurs at the onset of rapid failure
[5] Being large displacement and rapid movement of the landslide mass away from the headscarp



Figure 3: Photograph taken by Mr McGonagle at 7:42 am showing saturated ground and evidence of flow as described in Figure 2. A further small-scale landslide is observable near the cabin in the mid-distance (arrowed).

3.3 Surface Deformation and Tree Tilt

Surface deformation often occurs in the final stages of plastic deformation as the slope's internal structure becomes weaker and more deformable. This is often the final stage before rapid movement occurs. While it is likely that some degree of plastic deformation occurred on the slope prior to rapid movement, it is doubtful that this would have been able to be observed by any persons in close proximity due to the bush cover on the slope until perhaps seconds before rapid movement occurred.

Ground cracking would have occurred at the headscarp but would have not been noticed by anyone unless they were standing in close proximity to the headscarp, which would have been most unlikely given the steepness of the slope and the no doubt saturated vegetation.

3.4 Sound

Audible sounds from slopes and landslides can occur preceding rapid failure. They are a real but unreliable early warning sign, as they do not consistently occur and depend on the geology of the landslide, being more likely in brittle rock compared to cohesive materials (such as is the case at Mauao).

We understand Mr and Mrs Maclennan reported hearing noises from the slope above their campsite before daylight on the 22nd which may have been related to stress changes in the slope. If similar sounds occurred closer to the time of failure at 9:30 am, we consider it doubtful that, given the likely ambient noise from waves and wind, they would have been clear enough to provide an unambiguous warning to people nearby.

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4 Possible Contributing Factors to the Landslide

4.1 Vegetation Effects

4.1.1 Background

In general terms, vegetation, particularly low height tree cover, can improve slope stability in the near surface materials by reinforcing the soil with root systems, which increase shear strength. Vegetation also reduces pore water pressures through interception and evapotranspiration, thereby lowering the likelihood of soil saturation, and therefore slope failure, during rainfall events.

A 'Window of Instability' exists, somewhere roughly between three to ten years after vegetation removal, in which the highest landslide rates are frequently observed. During this window, the old roots have largely rotted, which allows additional water to percolate into the soil, and any new vegetation's roots are not yet extensive enough to provide strength.

4.1.2 Vegetation Changes on Mauao

Aerial photographs of Mauao date back to 1943 and are summarised in Appendix A of the HD Geo (2025) report. Vegetation over the lower slopes above the campground has been largely absent on the hillslopes since the earliest available aerial photographs, and we understand that Mauao has been largely devoid of vegetation for potentially hundreds of years in its role as a fortified pā (Staff Member E TCC, pers comm). Some vegetation is apparent on the lowest parts of the slopes above the campground in all the aerial imagery shown on the HD Geo report. No clear period of total vegetation removal is apparent in the photographs.

However, to ascertain if there have been recent changes in vegetation, we have reviewed aerial photographs from 2007 – present as shown in Appendix 1.

In summary, while there are seasonal differences in shadows which complicates interpretation to some extent, there are clear differences in extent of vegetation in the aerial photos between 2015 and early 2019 (noted by the red dashed polyline in the 2019 image on Figure A1.9 in Appendix 1). Some additional removal also occurred between the early 2019 image and the next available (Dec 2020), also shown by a red polyline in the Dec 2020 image (Figure A1.8). There are no significant changes in vegetation that we can see in the images prior to 2019 (2007 and 2015) nor in the later images (July 2021 – March 2025).

The timeframe between the 2019 clearance and present day is uncomfortably within the window of instability referred to above. Whilst this is unlikely to be proof of causation[6], the area of vegetation has clearly been removed near the head of the 22 January landslide and in areas that had previously been identified as historic landslides. However, the areas where vegetation has been removed are relatively small and are not entirely above the area of initiation of the fatal landslide. Clearance also occurred to the southwest of the headscarp of the 22 January landslide (Figure A1.9 of Appendix 1) and this part of the slope did not fail. Additionally, the depth of the 22 January landslide is well below the penetration depth of root systems of even tall trees. It is therefore unlikely in our opinion that vegetation removal would have greatly affected slope stability compared to the extreme nature of the rainfall event that occurred in the days prior to 22 January 2026.

[6] This report does not intend to assess causation. However, mechanisms of failure are discussed in WSP (2026).

4.2 Water Pipeline

The water pipe visible in photographs (Figure 2 as an example) is understood to have been a 180-millimetre polyethylene pipeline for firefighting purposes. The pipe appears to be intact in the photograph in Figure 2 (taken at 6.17 am): TCC records show that it breached sometime between 9.23 and 9.29am on 22 January, minutes to seconds before evacuative slope failure occurred.

It is likely that the breach was due to plastic deformation of the slope immediately prior to brittle failure and large displacement occurred. We assume that when it breached, it would have released some volume of water, however the slope was already saturated, and probably displacing at this point, and it is therefore unlikely to have been a significant precursor event to the fatal landslide.

4.3 Summary

Our comments in Sections 4.1 and 4.2 are high-level and are not based on a detailed geotechnical assessment. Further assessment by other parties may lead to different conclusions. However, in our opinion, neither vegetation clearance nor the water pipeline appear to have materially contributed to the initiation of the landslide. Having stated this, we are not aware of TCC undertaking a geotechnical assessment for either matter. Given the sensitive nature of the slope was well understood, it would have been prudent to have considered what the possible destabilising effects could have been (devegetation or water leakage). By way of example, it is not clear that there was any plan for a staged revegetation strategy in parallel with tree removal, nor does there appear to have been much consideration in positioning the water pipe, which was partly through an area that had been recognised as an inactive landslide.

5 Trigger Action Response Plan (TARP)

Both the WSP (2023) and HD Geo (2025) reports refer to development of a Trigger Action Response Plan (TARP). In our opinion, a properly developed and implemented TARP was likely the most suitable option to manage the levels of risk that had been assessed. Few permanent structures, other than the ablution block were exposed, and additionally, campground occupants are typically mobile (compared to an aged population for example) such that they can move quickly.

5.1 Background

A TARP is a risk management tool that links specific warning criteria to pre-planned responses. Its fundamental purpose is to ensure that when monitored conditions change (e.g. slope movement, pore pressure, rainfall intensity), the appropriate actions are taken immediately and consistently by personnel ‘on the ground’, without requiring approval by persons with higher authority in the organisational hierarchy.

The earliest use of the wording “Trigger Action Response Plan (TARP)” in New Zealand guidance appears to be in WorkSafe Approved Code of Practice (ACOP) issued September 2016 ‘Ground or Strata Instability in Underground Mines and Tunnels’ (WorkSafe, 2016), although the acronym likely existed for many years prior to this. The term gained wider usage in geotechnical and geohazard engineering through the North Canterbury Transport and Infrastructure Recovery (NCTIR) program following the November 2016 Kaikoura Earthquake. TARPs have since been adopted by major infrastructure operators including NZTA, KiwiRail and fuel companies.

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Components of a TARP include:

- **Definition of baseline conditions:** This is the normal, safe state of the site or system, or the "green" level where indicators are within expected ranges and no special action is needed as the likelihood of ground movement is very low.
- **Trigger levels & thresholds:** Predefined **alert levels** (e.g. Amber, Red) with quantifiable thresholds for each. These triggers might be instrument readings, observations, or other metrics that signal worsening conditions – for example, rainfall levels exceeding a set value, or movement rates reaching a critical threshold. Each level's criteria are clearly specified in the TARP such that there is no ambiguity when a threshold is crossed.
- **Specified actions for each trigger:** A **set of pre-planned response actions** corresponding to each trigger level. For every threshold exceedance, the TARP spells out what to do *immediately* – such as increased inspections, stopping work, evacuating an area, installing temporary support, or alerting emergency services. Actions are practical measures that can be undertaken quickly to mitigate the hazard or prevent further escalation.
- **Roles and responsibilities:** Clear assignment of who is responsible for each action and decision. The TARP identifies key personnel (e.g. geotechnical engineers, site supervisors, safety managers) and outlines their duties when a trigger level is reached. This ensures accountability and swift execution – everyone should know who must do what when a warning is triggered.
- **Communication and escalation protocols:** Established procedures for notifying relevant parties and escalating the response as needed. This includes whom to inform at each trigger level (project managers, authorities, neighbouring property owners as possible examples) and how to escalate to higher management or emergency responders if conditions worsen.
- A mechanism for **regularly reviewing** the TARP's effectiveness and updating it. As projects evolve or new data becomes available, trigger thresholds and response strategies will likely need refinement. A TARP can therefore be considered as a 'Living Document'.

An (imperfect) example TARP document is provided in Appendix 2.

5.2 Application to the Holiday Park

We envisage that a landslide TARP for the campground could have had a staged response primarily based on rainfall triggers and antecedent soil moisture (as this was recognised as an important consideration in both Richards (1999) and WSP (2023a)). An example of these considerations is shown in Figure 4, where the y-axis indicates rainfall that has occurred, or is forecast to occur, and the x-axis indicates the antecedent soil moisture condition. In this example, the TARP is updated daily in response to measured and predicted rainfall. It shows a prediction for the next four days; the first two days are wet days as a rainfall event passes through; Day three is the first dry day, but with antecedent soil moisture effects. By Day four, the prediction is that baseline conditions will have re-established.

Four zones (or 'levels') are also shown in Figure 4. A different response would be developed for each level, with examples as follows.

- **BAU**: 'Business as Usual'; or the baseline condition. No actions.
- **Level 1**: Heightened Awareness and possible evacuation of campsites closest to toe of the slope.

- **Level 2**: Evacuation of campsites within some distance (say 2.5H:1V as per WSP (2023)) of the toe of the slope
- **Level 3:** Evacuation of the entire campground.

Development of a site-specific TARP would have required estimation of the influence of antecedent rainfall specifically for the geological conditions at Tauranga, which we understand has not been done to date. However, as a living document, the TARP could have been initially developed to be as simple as evacuation within a 4H:1V angle in the event of rainfall exceeding 1 in 50 to 1 in 100-year rainfall for durations of 12 hours or more. While setting more accurate thresholds would have required additional analysis, judgement and stakeholder engagement and would therefore have taken some time, even an initial TARP would have most likely caught the Jan 2026 event due to its magnitude.

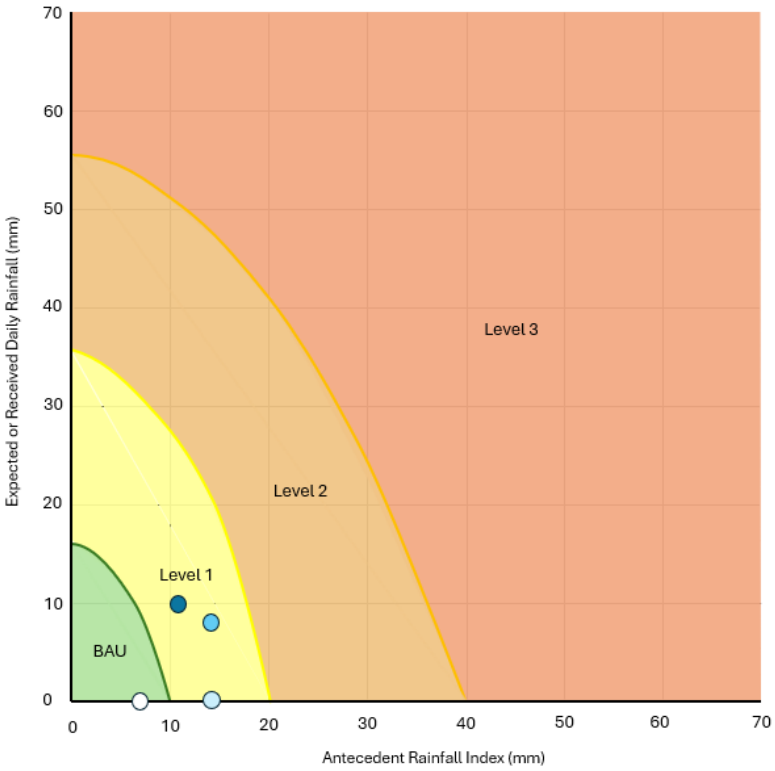

Figure 4: Example Rainfall TARP considering expected or actual daily rainfall and antecedent rainfall. Day 1 is represented by the dark blue dot, with the forecast for each subsequent day in increasingly lighter coloured dots (redrawn from Justice et al, 2018). Please note that the numbers shown on axes are not calibrated for Tauranga conditions.

As an alternative to the methodology outlined above, a TARP could have been developed using site specific and remotely monitored water-related metrics — such as soil water index and / or groundwater height to develop thresholds for various actions.

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6 Conclusions

The fatal landslide of 22 January 2026 occurred in an area where landslide hazards had long been recognised and where the potential for rainfall-triggered slope failure was already well established. The rainfall preceding the event was extreme, and there were observable indicators of instability in the hours before failure; however, many of those indicators were unlikely to have been sufficiently distinct to provide a clear and reliable warning to non-specialists in real time.

Overall, while uncertainty remains around some technical aspects of the event including the effect of partial devegetation, the available information indicates that the landslide hazard to the campground was longstanding and that the potential consequences were severe.

In our opinion, a properly developed and implemented TARP was likely the most suitable option to manage the levels of risk that had been assessed.

7 ENGEO Report Authors

Richard Justice (Main Author), MSc (Hons, Engineering Geology)

Richard is a Principal Engineering Geologist with approximately 30 years industry experience. He has been heavily involved with the assessment and design of mitigation works for slope instability over the last 15 years. He was instrumental in the development of a systematic Slope Rating System for KiwiRail, which is based on risk assessment and management principles.

From 2016 to early 2021, Richard was seconded full time to the North Canterbury Transport and Infrastructure Recovery Project (NCTIR), where he held two roles as Geotechnical Principal – Kaikōura South, responsible for slope instability mitigation south of Kaikōura, including passive rockfall protection works and Geotechnical Lead – Transport Corridor Resilience, leading geotechnical input into natural-hazard resilience for the transport corridor.

Richard played a key role in the NZGS Slope Stability Guidance Series, contributing to both its technical development and strategic direction. His involvement has included authoring and reviewing guidance, promoting risk-based approaches and aligned with New Zealand geotechnical practices. He is also involved with the current update to the Australian Geomechanics Society Landslide Risk Management Guidance, issued in 2007.

Richard has a technical advisor role to the New Zealand Geotechnical Society, (a collaborating technical society of Engineering New Zealand) and is a registered Professional Engineering Geologist (PEngGeol).

Neil Charters (Reviewer), BSc (Hons), ME, CPEng

Neil is a Principal Geotechnical Engineer and has more than 20 years of experience in the field of geotechnical risk management. In this time he has been involved in assessing hazards and designing mitigation works for a range of sites and hazards.

He has held lead technical roles on a range of significant projects, including the North Canterbury Transport Infrastructure Recovery (NCTIR) programme, where he was part of the slope hazard mitigation team responsible for rapid assessment and design of rockfall protection measures to support reinstatement of State Highway 1 and the Main North Rail Line following the Kaikōura earthquake.

Neil has also led geotechnical investigations and design for major building projects such as the Tupuānuku Hall of Residence at the University of Canterbury, including foundation option assessments, screw pile design for high uplift and compression loads, and interpretation of load testing results. He has acted as Principal-in-Charge or Lead Engineer on projects including the Grey Base Hospital redevelopment, Lyttelton Port haul road earthworks, and residential subdivisions involving complex slope and retaining wall design.

His experience includes geotechnical response to emergency events such as the Port Hills fire, and design and monitoring of large earthworks and cut slopes. He led ENGEO's input to the Christchurch City Council's slope stability engineering panel following the Christchurch earthquake.

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8 Limitations

i. We have prepared this report in accordance with the brief as provided. This report has been prepared for the use of our client, Hon Paul Davison KC, the independent reviewer and their professional advisers in relation to the specified project brief described in this report. No liability is accepted for the use of any part of the report for any other purpose or by any other person or entity.

ii. The recommendations in this report are based on the ground conditions indicated from published sources, site assessments and subsurface investigations described in this report based on accepted normal methods of site investigations. Only a limited amount of information has been collected to meet the specific financial and technical requirements of the Client's brief and this report does not purport to completely describe all the site characteristics and properties. The nature and continuity of the ground between test locations has been inferred using experience and judgement and it should be appreciated that actual conditions could vary from the assumed model.

iii. This Limitation should be read in conjunction with the Engineering NZ / ACENZ Standard Terms of Engagement.

iv. This report is not to be reproduced either wholly or in part without our prior written permission.

We trust that this information meets your current requirements. Please do not hesitate to contact the undersigned on (03) 328 9012 if you require any further information.

Report prepared by



Richard Justice, CMEngNZ (PEngGeol)

Principal Engineering Geologist

Report reviewed by



Neil Charters, CMEngNZ (CPEng)

Principal Geotechnical Engineer

9 References

Australian Geomechanics Society (2007) Guidelines for Landslide Risk Management, comprising:

AGS (2007a). Guideline for Landslide Susceptibility, Hazard and Risk Zoning for Land Use Management.

AGS (2007b). Commentary on Guideline for Landslide Susceptibility, Hazard and Risk Zoning for Land Use Management

AGS (2007c). Practice Note Guidelines for Landslide Risk Management

AGS (2007d). Commentary on Practice Note Guidelines for Landslide Risk Management.

AGS (2007e). Australian GeoGuides for Slope Management and Maintenance.

Avalon Industrial Services (Avalon) (2006). Mauao Slopes: May 2006: Rockfall & Landslide Risk Review. Report Prepared for Tauranga District Council, no 0627A

Bay of Plenty Regional Council (BOPRC) (2026). Hydrometeorological Report of 13 January – 23 January 2026 Storm Events. BOPRC Environmental Publication 2026.01

de Vilder SJ, Kelly SD, Buxton R, Allan S, Glassey PJ. (2024). Landslide planning guidance: reducing landslide risk through land-use planning. Lower Hutt (NZ): GNS Science 77p.

HD Geo (2025) Mauao, Mt Maunganui. Geohazard Review Report. Project no HD3639. Report prepared for TCC, 6 June 2025

Justice, R., Saul, G., & Mason, D. (2018). Kaikoura Earthquake Slope Hazards—Risk Mitigation and Network Resilience. NZ Geomechanics News, December 2018

Richards, L. (1990). Mauao Stability Assessment, Mt Maunganui, Tauranga. Report prepared for Tauranga District Council, 31 May 1999

Steinacher, R., Medicus, G., Fellin, W., & Zangrel, C. (2009). The influence of Deforestation on Slope (In-) Stability. Austrian Journal of Earth Sciences, Vol 102/2 p 90-99.

Worksafe (2016) Approved Code of Practice (ACOP) Ground or Start Instability in Underground Mines and Tunnels. September 2016.

WSP (2023a). Tauranga Landslide Susceptibility Study. Technical Report. Report Prepared for Tauranga District Council, 22 September 2023

WSP (2023b). Tauranga City Council Assets – Natural Hazard Risk Assessment Mount Holiday Park. Report Prepared for Tauranga District Council, 01 December 2023

WSP (2026). Preliminary Geotechnical Appraisal Report – Mount Maunganui Beachside Holiday Park Landslide ref 2TA008.00, 16 March 2026

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Attachment 1:

Vegetation Changes 2007 - Present

Vegetation Changes above campground between 2015 and 2025

Figure A1.1 March 2025



Figure A1.2 July 2024



Figure A1.3 February 2024



Figure A1.4 September 2023



Figure A1.5 March 2023



Figure A1.6 January 2022



Figure A1.7 July 2021



Figure A1.8 December 2020



Figure A1.9 2019 (acquired between 7 Dec 2018 and 17 Jan 2019)



Figure A1.10 2015 (acquired on 03 Dec 2014, 08 Dec 2014 or 01 Mar 2015)



Figure A1.11 2007 (acquired on 05 Jan 2007, 19 Feb 2007 or 20 Mar 2007)



Appendix 2:

TARP Example

TRIGGER ACTION RESPONSE PLAN (TARP)

Rockfall Instability Assessment Matrix - Rainfall

Threshold level	ARI	Rainfall Depths (mm): Historical Data (XXX Tce)									
		30m	1h	2h	6h	12h	24h	48h	72h	96h	120h
Level 1	**15 Yrs**	13.5	20.4	30.7	56.4	80.1	109.1	141.7	160.3	174.5	184
Level 2	**50 Yrs**	18.4	28.0	42.1	76.9	108.3	146.0	189.0	214.0	231.5	243.5
Level 3	**250 Yrs**	26.2	39.3	58.4	105.3	146.5	196.0	250.5	282.0	303.0	318.5

Rockfall Instability Assessment Matrix – Seismic

Threshold level	Peak ground accelerations
Level 1	**0.2 – 0.3 g**
Level 2	**0.3 – 0.4 g**
Level 3	**>0.4 g**

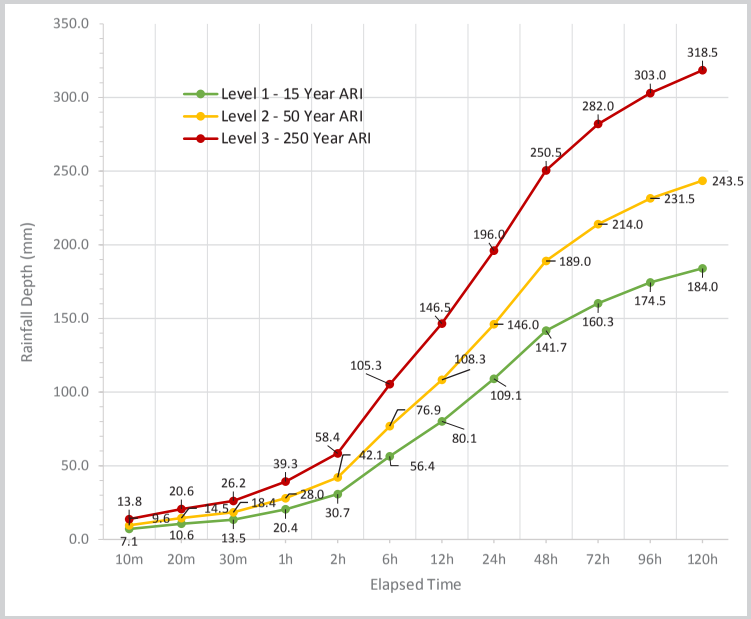

Figure 1. Trigger magnitudes for rainfall.

Stage 1: Monitoring	Level 1	Level 2	Level 3[1]
Observations and readings	Rainfall greater than **1 in 15-year** return interval **or peak ground accelerations of 0.2 – 0.3 g.**	Rainfall greater than **1 in 50-year** return interval or **peak ground accelerations 0.3 – 0.4 g.**	Rainfall greater than **1 in 250-year** return interval **or peak ground accelerations >0.4 g**
Response and actions[2]	• Notification alert sent out. • ENGEO to assess event magnitude and discuss with XXX any change to the geotechnical threat to the XXXX. ENGEO may recommend additional action to assess or control geotechnical threats to the LWPL. • XXX will assess the XXX risk and condition and implement further operational actions as required; • A site walkover will be undertaken when safe to do so. A drone survey may be required to help identify changes to the hazards; and, • Aerial observations of slope stability concerns may be completed using a drone survey.	• Notification alert sent out. • ENGEO to assess magnitude during and/or following the event and discuss with XXX any change to the geotechnical threat to the XXX. ENGEO may recommend additional action to assess or control geotechnical threats to the LWPL. • XXX will assess the XXX risk and condition and implement further operational actions as required. It is anticipated that XXX may restrict or stop operation of the XXX until after the initial XXX walk or drone flyover is completed; • A site walkover undertaken when safe to do so. A drone survey may be required to help identify changes to the hazards; and, • Aerial observations of slope stability concerns will be completed using a drone survey.	• Notification alert sent out. • Immediately cease operation of the pipeline in accordance with the XXX Emergency Response Plan; • A drone survey may be undertaken as soon as possible to identify changes to the hazards and potential risks to the pipeline; • A site walkover will be undertaken when safe to do so; • Emergency works to mitigate critical hazards will be undertaken when safe to do so; and, • Re-establishment of the operation of the XXX will be at the direction of the Terminal Manager. The Terminal Manager will consider the XXX condition, pipeline inspections, plant integrity, geotechnical risk, MoC considerations, fuel supply criticality and security, etc. in assessing any timing or restrictions of the re-established operation of the XXX.

[1] no automated notification has been setup for a level 3 rainfall event (1 in 250-year ARI). This magnitude of event will be well forecasted, and the level 2 rainfall triggered alert (1 in 50-year) will serve as a signal to manually monitor the weather conditions, allowing assessment of whether upgrading from a level 2 to a level 3 alert is required.

[2] When deemed necessary, ENGEO will provide a memorandum of observations and any further actions required to XXX.



