



AGENDA

Ngā Poutiriao ō Mauao and Mauao Trust joint meeting Wednesday, 6 August 2025

I hereby give notice that a Ngā Poutiriao ō Mauao and Mauao Trust joint meeting will be held on:

Date: Wednesday, 6 August 2025

Time: 9.30am

**Location: Mount Maunganui Lifeguard Club
Upstairs Function Room
21 Adams Avenue
Mount Maunganui**

Please note that this meeting will be livestreamed and the recording will be publicly available on Tauranga City Council's website: www.tauranga.govt.nz.

**Marty Grenfell
Chief Executive**

Terms of reference - Ngā Poutiriao ō Mauao

Membership

Members

The Joint Board is comprised of eight members being;

- Four representatives appointed by the Mauao Trust:
 - s 7(2)(a) - Privacy

 (Ngāti Pukenga)
 - s 7(2)(a) - Privacy

 (Ngai Te Rangi)
 - s 7(2)(a) - Privacy

 (Ngāti Ranginui)
 - s 7(2)(a) - Privacy

 (Waitaha a Hei)
- Four representatives appointed by Tauranga City Council: (these members will be appointed for a term subject to Council triennial elections)
 - Cr Hēmi Rolleston (Deputy Chair)
 - Deputy Mayor Jen Scoular
 - Cr Rod Taylor
 - Cr Hautapu Baker

Quorum

Four members; comprised of at least two members who have been appointed by the Mauao Trust and at least two members appointed by Tauranga City Council.

Meeting frequency

The Joint Board shall meet as necessary in order to carry out its functions, but it will be no less than two times per year.

The Joint Board will also meet with the Mauao Trust together, and with Tauranga City Council at least once per year.

Scope

- The purpose of the Joint Board is to give effect to the purpose of the Mauao Trust to protect and preserve the mauri of Mauao to ensure the natural, physical and cultural integrity of Mauao is maintained. In achieving this purpose, the Board will:
 - Act in accordance with the guidance from the Mauao Trust on matters relating to mauri and tikanga of Mauao.
 - Act consistently with the principles of Te Tiriti o Waitangi/the Treaty of Waitangi (as outlined in the Tauranga City Council and Iwi/Hapu Protocols) and its statutory obligations under the Reserves Act 1977.
 - Cooperate in partnership with a spirit of good faith, integrity, honesty, transparency and accountability.
 - Actively work together using shared knowledge and expertise.
 - Engage early on issues of known interest to either of the parties.
 - Enable and support the use of te reo and tikanga Māori.
 - Acknowledge that the parties' relationship is evolving.
 - Have particular regard for the interests of the Tauranga community.

Purpose

- The functions of the Joint Board will be to:

- Develop and review a Mauao Reserve Management Plan in accordance with the process outlined in the Memorandum of Understanding for Mauao Historic Reserve and Mauao Joint Administration Board (Nga Poutiriao o Mauao - The Guardians of Mauao) (the MOU).
- Allocate funding provided to the Joint Board in accordance with the Funding Agreement in the MOU towards the implementation of projects that are in or consistent with the Mauao Reserve Management Plan and towards the day to day operation of Mauao.
- Secure approval of the Mauao Trust to the Mauao Reserve Management Plan before the Joint Board approves the plan.
- Ensure the contractual arrangements are being managed consistently with the policies, objectives of the Mauao Reserve Management Plan.
- Identify, approve and oversee the implementation of projects either identified in or consistent with the objectives of the Mauao Reserve Management Plan.
- Ensure the contractual arrangements are being managed consistently with the policies, objectives and strategies of the Joint Board and the Mauao Reserve Management Plan.
- Provide to and/or seek advice from the Mauao Trust and Minister of Conservation on matters affecting Mauao and on achievement of the Mauao strategic objectives, in particular the Joint Board shall seek guidance from the Mauao Trust on tikanga related matters.
- Consider and recommend to the Mauao Trust requests for concessions, leases and licences for all activities on Mauao and if the Mauao Trust approves the request, undertake the process for the issuing and administration of the concession, lease or licence for the particular activity.

Meeting procedures

- The Joint Board may regulate its own procedures, subject to:
 - The Joint Board operating on a preferred basis of consensus decision making. If this is not achieved, then resolutions may only be actioned by the Joint Board where this is agreement by a 75% majority of the members present and voting at a meeting.
 - No business shall be transacted at any meeting of the Joint Board unless at least a quorum of members (whether voting or not) is present at the meeting during the whole time at which business is transacted.

Power to recommend

- To Council, Mauao Trust and/or any standing committee as it deems appropriate.

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- 1 OPENING KARAKIA**
- 2 APOLOGIES**
- 3 PUBLIC FORUM**
- 4 ACCEPTANCE OF LATE ITEMS**
- 5 CONFIDENTIAL BUSINESS TO BE TRANSFERRED INTO THE OPEN**
- 6 CHANGE TO ORDER OF BUSINESS**

7 CONFIRMATION OF MINUTES

7.1 Minutes of the Ngā Poutiriao ō Mauao meeting held on 12 June 2025

File Number: A18599630

Author: s 7(2)(f)(ii) Governance Advisor

Authoriser: s 7(2)(f)(ii) Team Leader: Governance Services

RECOMMENDATIONS

That the Minutes of the Ngā Poutiriao ō Mauao meeting held on 12 June 2025 be confirmed as a true and correct record.

ATTACHMENTS

1. Minutes of the Ngā Poutiriao ō Mauao meeting held on 12 June 2025



MINUTES

Ngā Poutiriao ō Mauao and Mauao Trust joint meeting Thursday, 12 June 2025

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**MINUTES OF TAURANGA CITY COUNCIL
NGĀ POUTIRIAO Ō MAUAO AND MAUAO TRUST JOINT MEETING
HELD AT THE MOUNT MAUNGANUI LIFEGUARD CLUB, MAIN FUNCTION ROOM, 21 ADAMS
AVENUE, MOUNT MAUNGANUI
ON THURSDAY, 12 JUNE 2025 AT 9:30 AM**

MEMBERS PRESENT: [§ 7(2)(a) - Privacy], Cr Hēmi Rolleston, Cr Hautapu Baker, Cr Rod Taylor, [§ 7(2)(a) - Privacy]
[§ 7(2)(a) - Privacy]

IN ATTENDANCE: [§ 7(2)(f)(ii)] [§ 7(2)(a) - Privacy] [§ 7(2)(f)(ii)]
[§ 7(2)(f)(ii)]
[§ 7(2)(f)(ii)] [§ 6(c) - Maintenance of Law] [§ 7(2)(f)(ii)]
[§ 7(2)(f)(ii)]

EXTERNAL: [§ 7(2)(a) - Privacy]

1 OPENING KARAKIA

Karakia was held prior to the meeting starting.

2 APOLOGIES

APOLOGY

COMMITTEE RESOLUTION NG/25/2/1

Moved: [§ 7(2)(a) - Privacy]

Seconded: Cr Rod Taylor

That the apology for absence received from Councillors Scoular and Curach, [§ 7(2)(a) - Privacy]
[§ 7(2)(a) - Privacy] be accepted.

That the apology for absence received by [§ 7(2)(f)(ii)]
[§ 7(2)(f)(ii)] be noted.

CARRIED

3 PUBLIC FORUM

Nil

4 ACCEPTANCE OF LATE ITEMS

Nil

5 CONFIDENTIAL BUSINESS TO BE TRANSFERRED INTO THE OPEN

Nil

6 CHANGE TO ORDER OF BUSINESS

Nil

7 CONFIRMATION OF MINUTES

7.1 Minutes of the Ngā Poutiriao ō Mauao meeting held on 16 October 2024

COMMITTEE RESOLUTION NG/25/2/2

Moved: Cr Hautapu Baker

Seconded: s 7(2)(f)(ii)

That the Minutes of the Ngā Poutiriao ō Mauao meeting held on 16 October 2024 be confirmed as a true and correct record.

CARRIED

8 DECLARATION OF CONFLICTS OF INTEREST

Nil

9 BUSINESS

9.1 Mauao Filming Request

Staff

s 6(c) - Maintenance of Law

External

s 7(2)(a) - Privacy

Key Points

- Film Bay of Plenty (Film BOP) supported film makers in the region and attracted production to the region and covered from Waihi Beach to Ōpōtiki to Taupō.
- The Film request to Ngā Poutiriao o Mauao today was in regards to a show reel which will highlight the region and its different locations. s 7(2)(a) - Privacy noted that Film BOP would like to include a shot from the top of Mauao to showcase it as a filming location. and acknowledged the significance of Mauao.
- Other locations included in the show reel were Hell's Gate Rotorua and the top of Summer Hill.

Discussion points raised

- In response to a question, s 7(2)(a) - Privacy agreed that if filming were to take place, she was happy for the footage to be sent to Ngā Poutiriao o Mauao prior to release.
- s 7(2)(a) - Privacy noted that there was a discussion being held between Mauao Trust and Hidden Aotearoa that was working to tell the story of Mauao. She also noted that there was no remuneration stated in this Film Request.
- Ngā Poutiriao o Mauao members felt that they needed more time to make a decision in alignment with the current review taking place of the Events and Filming Policy. It was decided that members would defer the decision to a later date.

COMMITTEE RESOLUTION NG/25/2/3

Moved: § 7(2)(a) - Privacy

Seconded: § 7(2)(a) - Privacy

That the Ngā Poutiriao ō Mauao:

- (a) Receives the report "Mauao Filming Request".

CARRIED**9.2 Mauao Trust Verbal Update****Mauao Trust** § 7(2)(f)(ii)**Mauao Trust** § 7(2)(a) - Privacy**Key Points**

- Mauao Trust acquired the full budget for the Whare Manaaki o Mauao.
- The Implementation Plan in Te Korowai was now complete.
- Mauao Trust tabled a letter addressed to Mayor Drysdale and also Chief Executive in accordance with Clause 5 in the Memorandum of Understanding – Resource and Funding and Clause 5.3 The letter requested the MOU to include a fixed \$30,000 annual funding to Mauao Trust operations and .
- It was noted that there was currently an under spend in the operations budget for Ngā Poutiriao o Mauao and § 7(2)(f)(ii) asked if the unspent budget could be referred to Mauao Trust to provide financial stability and reduce the administrative burden of annual funding applications.
- § 7(2)(f)(ii) noted the Mauao Trust had applied for funding from other sources but there was constraints.
- It was suggested that a collaborative process between the Council and the Trust to assess the adequacy of funds before each review cycle, accommodating inflation and increased operational costs.
- Staff discussed the allocation of funds, with § 7(2)(f)(ii) confirming that \$10,000 was set aside annually and exploring the possibility of finding additional funds.
- A discuss was held on the resource consent process for the building, and emphasised the need for a letter of acknowledgement from TCC to Mauao Trsut to support the funding allocation for the Whare Manaaki Project.

COMMITTEE RESOLUTION NG/25/2/4

Moved: § 7(2)(f)(ii)

Seconded: § 7(2)(f)(ii)

That the Ngā Poutiriao ō Mauao:

- (a) Receives the report "Mauao Trust Verbal Update".

CARRIED

9.3 Review of Te Mahere Whakamahinga O Mauao (Mauao Implementation Plan)

Staff

s 6(c) - Maintenance of Law

Key Points

- s 6(c) - Maintenance of Law spoke to his report.

COMMITTEE RESOLUTION NG/25/2/5

Moved: Cr Rod Taylor

Seconded: s 7(2)(a) - Privacy

That the Ngā Poutiriao ō Mauao:

- (a) Receives the report "Review of Te Mahere Whakamahinga O Mauao (Mauao Implementation Plan)".
- (b) Agrees to undertake a review of Te Mahere Whakamahinga O Mauao (Mauao Implementation Plan).
- (c) Agrees that a working group is established, comprising representatives from Mauao Trust and Tauranga City Council, to lead the review process.

CARRIED

9.4 Project Updates May 2025

Staff

s 6(c) - Maintenance of Law

Key Points

- s 7(2)(a) - Privacy spoke to his report.

In response to questions

- Mauao currently sat outside of controlled air space.

Actions

- Requests a workshop be held for Ngā Poutiriao o Mauao and Mauao Trust to wānanga Events and Activities on Mauao.

COMMITTEE RESOLUTION NG/25/2/6

Moved: Cr Hēmi Rolleston

Seconded: s 7(2)(a) - Privacy

That the Ngā Poutiriao ō Mauao:

- (a) Receives the report "Project Updates May 2025".
- (b) Authorises the Chair to approve the final Archaeological Research Strategy on behalf of Ngā Poutiriao ō Mauao, subject to prior approval by Mauao Trust.
- (c) Agrees, in accordance with its authority to allocate project funds committed by Council for Mauao, to re-allocate \$95,000 from the Mauao Development budget to Mauao Placemaking Projects budget to enable the whole approved seating, fencing and signage plan included at Attachment 3, to be delivered this financial year.
- (d) Agrees, in accordance with its authority to allocate project funds committed by Council for Mauao, to re-allocate \$45,000 from the Mauao Development budget to Mauao Placemaking Projects budget to enable install of CCTV security cameras on Mauao.

CARRIED

9.5 Operational report

Staff

s 7(2)(a) - Privacy

Key Points

- s 7(2)(a) - Privacy spoke to his report.

COMMITTEE RESOLUTION NG/25/2/7

Moved: s 7(2)(a) - Privacy

Seconded: Cr Hautapu Baker

That the Ngā Poutiriao ō Mauao:

- (a) Receives the report "Operational report for May 2025."

CARRIED

10 DISCUSSION OF LATE ITEMS

Nil

11 CLOSING KARAKIA

s 7(2)(a) - Privacy closed the meeting with a karakia.

The meeting closed at 1:14pm.

The minutes of this meeting were confirmed as a true and correct record at the Ngā Poutiriao ō Mauao and Mauao Trust joint meeting held on 6 August 2025.

.....
s 7(2)(a) - Privacy

CHAIR

8 DECLARATION OF CONFLICTS OF INTEREST

9 BUSINESS

9.1 Mauao Trust Update

ATTACHMENTS

Nil

9.2 Operational Report

File Number: A18576629

Author: s 6(c) - Maintenance of Law

Authoriser: s 7(2)(f)(ii)

PURPOSE OF THE REPORT

1. This report identifies the key operational issues and achievements over the reporting period, May 2025 – July 2025. It identifies up and coming work of interest to Ngā Poutiriao ō Mauao, including ongoing visitor records and an up-to-date events calendar for Mauao

RECOMMENDATIONS

That the Ngā Poutiriao ō Mauao:

- (a) Receives the report Operational Report for July 2025.

DISCUSSION

Visitor Numbers

2. Total visitor numbers (calendar year):

Year	Summit Visits (Calibrated)	Te Ara Tūtanga (Base track)	Total visits
2016	876,297	419,588	1,295,885
2017	903,604	339,031	1,242,635
2018	702,665	489,667	1,192,332
2019	796,671	544,912	1,341,583
2020	589,651	506,097	1,095,748
2021	576,093	499,093	1,075,186
2022	566,019	531,284	1,097,304
2023	658,949	583,923	1,242,872
2024	722,744	651,381	1,374,125
2025	400,155	368,648	768,803

Te Ara Tūtanga (Base Track) Visits

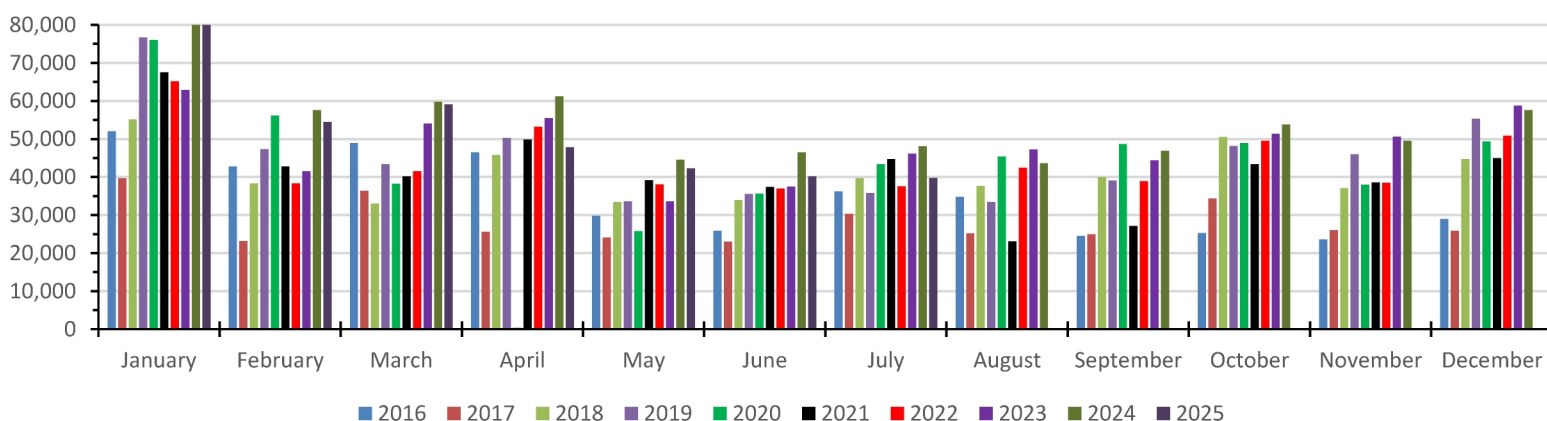


Figure 1: Te Ara Tūtanga (Base track) numbers over this year, compared to previous years.

Mauao Tihi (Summit) Calibrated Visits

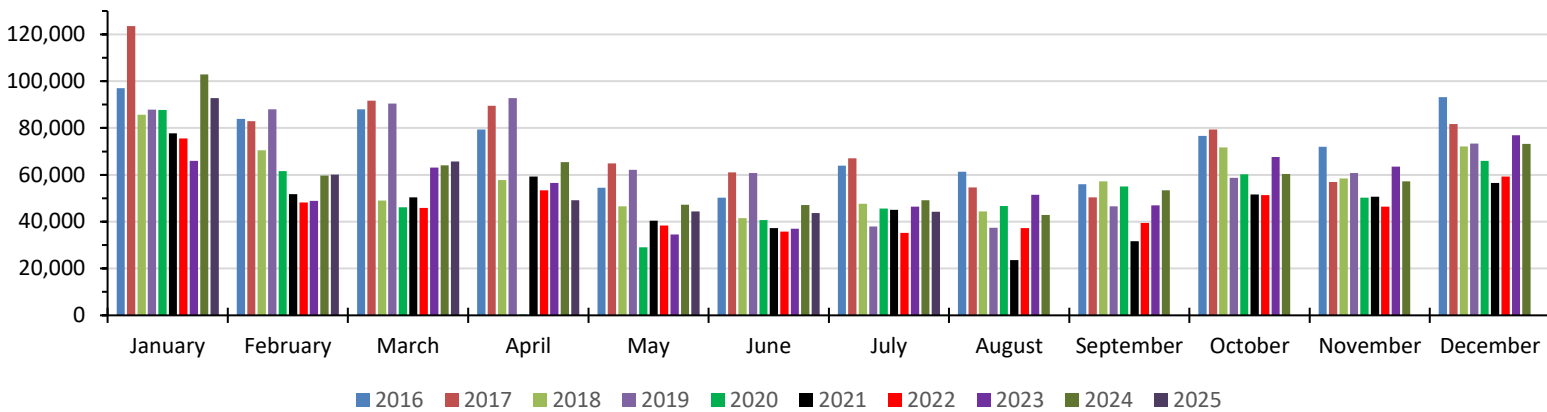


Figure 2: Calibrated Te Tihi (summit) numbers over this year, compared to previous years.

Volunteer Support

3. Volunteer support on Mauao consisted largely of two care groups who service a portion of the bait lines on Mauao. This includes volunteers from Forest and Bird as well as the volunteers through 'Western Bay Wildlife Trust' (WBWT).

Events

4. Events taking place on Mauao for the period from July 2025 to November 2025.

Mauao Events			
Description	Start Date	End Date	Attendance
Mount Maunganui Half Marathon 2025	23/08/2025	23/08/2025	3,000
Tauranga City to Surf Run/Walk 2025	19/11/2025	19/11/2025	3,000
GenX/Marra Tinman Triathlon 2025	23/11/2025	23/11/2025	600
Non-event's, general use:			
Good Neighbour 'Good Walk'	01/11/2025	01/11/2025	100

Incidents/ Rescues

5. Recorded incidents/ rescues on Mauao by St Johns.

Date	Age	Sex	Degree	Description	Transport
16/5/2025	62	F	Minor	Fall on Ta Ara Tūtanga	Transported to ED by Ambulance
2/6/2025	63	M	Minor	Medical	Declined ambulance after receiving help off Mauao
24/6/2025	73	M	Minor	Accident -Tripped over	Transported by Ambulance to 2nd Ave A&M

Te Kaiwhakatere

6. Recorded bookings of Te Kaiwhakatere.

Te Kaiwhakatere Hirage	
Date	Times hired
10/5/2025	2
15/5/2025	1
21/6/2025	1
Total: 4	

Recent Success/Update

7. This year's planting sites have been completed.
8. The bespoke stonework around Mauao received its 6 monthly resealing by Law Creative to ensure these important installations remain at a high standard. This was timed for the week prior to the Matariki ceremony.
9. Three of the four entranceway cameras have now been installed. The final camera will soon be installed on the below existing (not-used) power pole. This pole will be shortened some and in time will have a wooden facade added to hide the camera cable and incorporate this old infrastructure into the wider signage and interpretation work.



10. The removal of a dead/dying Pine tree, a completely dead pine tree, and a hawthorn tree on the northern side of Te Ara Tūtanga (base track) was successfully removed from Mauao.



11. Rabbit control is ongoing and continuing to have good results with an average of 5-10 kills out of 15-25 seen. Mauao rabbits continue to have a very high female ratio which reenforces the need to continue the control pressure. Burrow fumigation continues to target sensitive areas of archaeology.

For the 24/25 financial year (July 24 -June 25) a total of 730 rabbit were controlled via shooting on Mauao.

12. The pre- and post-monitoring data for the May pulse showed the largest recorded percentage of rats since the start of monitoring in 2021, a rising Mice percentage, and a predicted invertebrate low.

This pulse showed the positive affect of Ditrac pesticide on rats, reducing to 3.33% with the only prints found in the area currently without control (planned for the August pulse).

Unfortunately, this also showed the resilience Mice have to this muti-feed pesticide compared to the single feed Contrac. Although there was population growth throughout this pulse, it was still less than the Mice high of 81.67% for this same period from last year. This is likely attributed to the small starting population caused by the use of Contrac in both the September and December pulse compared to just the September pulse in previous years.

As expected with the colder temperatures as well as a growing Mice population, the invertebrates dropped to a similar level as last year.

	Rat's	Mice	Inverts
6/5/2025	13.33%	38.33%	15%
18/06/2025	3.33%	60.00%	15%

13. The full report from HD Geo who is now completing the Mauao rock stability monitoring is attached. This first report included background research and a wide overview to ensure a quality transition. The ongoing yearly reports will be focused on their operational visits and measurements.

Planned work for the upcoming period.

14. Undertake the August Pest Animal Control pulse.
15. Create a plan and timeline for the renewal of Te Ara Tūtanga.
16. Work with arborist to undertake the below methods in preparation of creating a Mauao Pōhutukawa growing program. This approach was tabled at the Mauao Trust Hui with no issues raised.

Work with Kawana (Myrtle Rust researcher) to undertake the same genetic test on some older Pōhutukawa on Mauao to ensure they are the endemic species. Once confirmed, cuttings from these trees will be made and taken (ensuring the health of the tree is not compromised) instead of their seed, as their seed could be hybrids from non-endemic pollen. The cuttings will be placed together in a nursery room that is isolated from external pollen. This will ensure all seeds that come from these cuttings are the true endemic species and will form the base of our Pōhutukawa growing program.

17. Undertake the replacement of all damaged bespoke signage (damage targeting Te Reo Māori)
18. Plan the general planting sites for next year. Undertake planning with the Ngā Tipu ō Mauao group to plan the Rongoā planting site for next year.
19. Install posts and a shade-sail at Waipatukakahu to allow users and weavers shelter when using the weaving platform.

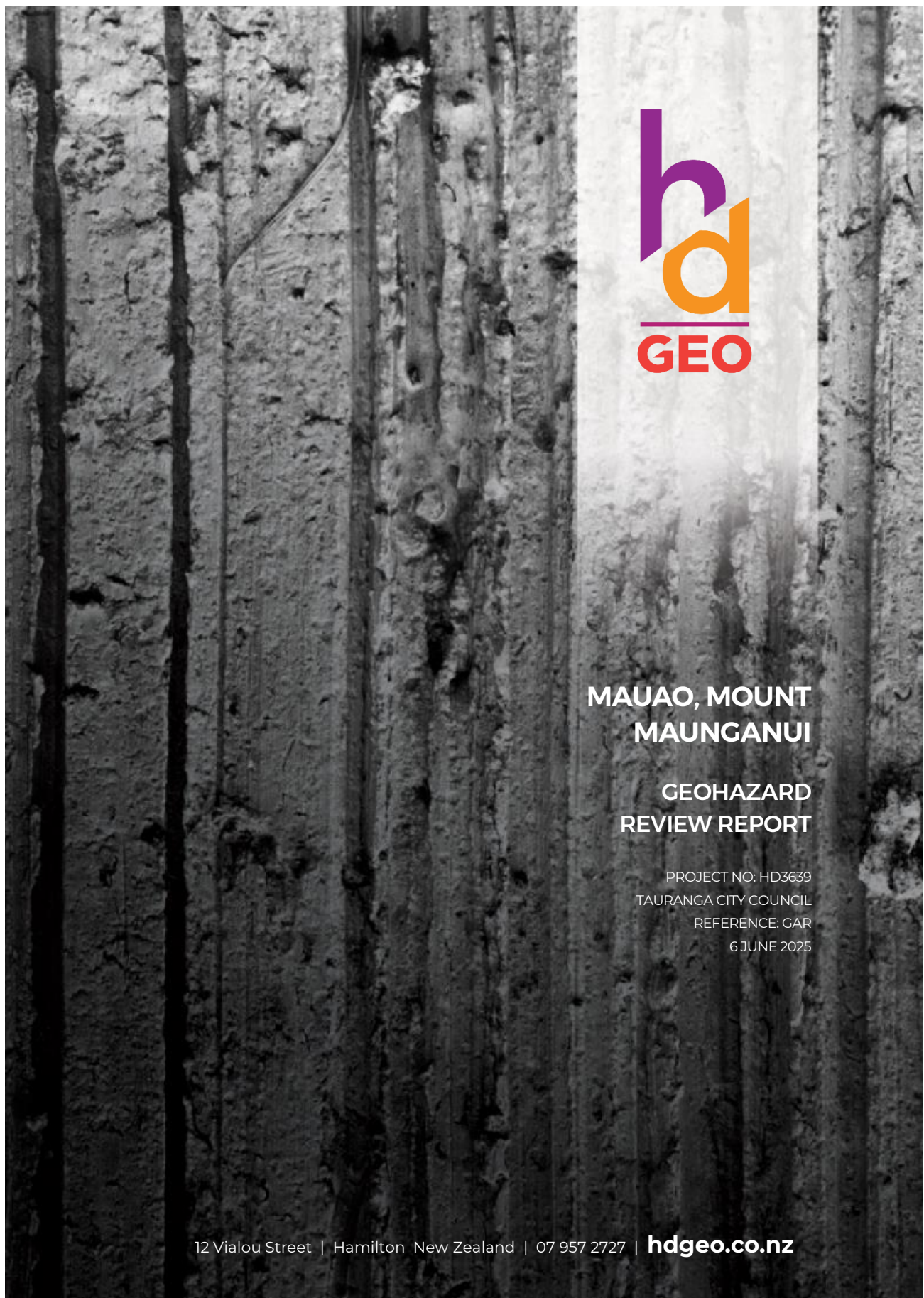
Ongoing maintenance

20. Ongoing maintenance continues the following aspects of the reserve:

- Pest plant and animal control;
- Stock and pasture management;
- Walkway maintenance;

ATTACHMENTS

1. **HD Geo Mauao, Mount Maunganui Geohazard review report 2025 - A18346286** [↓](#) 



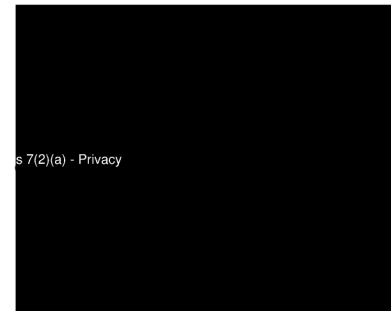
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PREPARED BY:



REVIEWED BY:



APPROVED BY:



Revision No.	Prepared by	Reviewed by	Approved by	Description	Issue type	Date issued
0				Geohazard Review Report (GHR)	Final	06.06.2025

Introduction

Tauranga City Council (TCC) have engaged us to undertake regular geohazard 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 for 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.

We present risk management options that are intended to assist Tauranga City Council and the three iwi of Tauranga Moana¹ (Ngāi Te Rangi, Ngāti Pūkenga and Ngāti Ranginui and Te Arawa iwi, Waitaha) with the ongoing management of geohazards across Mauao.

Scope

The scope of our assessment included:

- a desktop study of the site including a review of geology maps, historical aerial photography, contour maps, previous Avalon records, and the NZ Geotechnical Database (NZGD)
- a site visit with Avalon industrial services Ltd and TCC including a drone survey
- creating a geohazard register and GIS map
- geohazard risk assessment
- geohazard risk management options and recommendations

Cultural significance

Mauao is a culturally and spiritually significant landmark for the iwi of Tauranga Moana, revered as a taonga that embodies the mana and identity of local Māori. Its preservation is vital to maintaining the mauri (life force) of the site and ensuring that its historical, cultural, and environmental values are respected and protected.

The cultural significance of the area will be valued and considered when making recommendations for the management or mitigation of identified geohazards.

Site description

General description

Mauao is a 232 m high mountain located at the end of the western peninsula of the Tauranga suburb of Mount Maunganui.

Mauao² is generally characterised by steep to extremely steep upper slopes (30 to 45 degrees) covered by native vegetation and trees. Vertical rhyolitic bluff outcrops partially surround the flat topped summit (Te Tihi o Mauao). The lower slopes are generally moderately steep to steep (15 to 30

¹ [Mauao - Tauranga City Council](#)

² Mauao 3D drone imagery link, [HD3639 Mauao Drone_2.05.25](#)

degrees) covered by native vegetation and trees across the western side, with the remaining slopes covered in grass used for sheep grazing.

The northern, western and southern sides of Mauao are bounded by the Pacific Ocean. The eastern side of Mauao is bounded by Hinekite Takutai (Main Beach) and a TCC campground. Further to the east is Mount Maunganui town centre, with a mixture of residential/commercial development and associated infrastructure.

The Mauao water reservoir which houses Mount Maunganui's main water supply is located on the southern slope along Te Ara Motukauri Track.

There are several walking tracks/assets located across Mauao to Te Tihi o Mauao (Summit). The tracks/assets are briefly described below.

- **Te Ara Tutanga walking track (base track)** – traversing around the base of Mauao, approximately 3.4 km long. Generally undulating terrain.
- **Te Ara Motukauri Track (4WD track)** – from pilot bay in the south-east across the western slopes to the summit, approximately 2 km long. Vehicles can access the summit using this track. Mauao water reservoir is located approximately 700m from the track base. This track is gradually inclined becoming steeper near the summit.
- **Te Ara Waikorire Track (Staircase track)** – starts at the intersection of Te Ara Rangiwhakaoma Track and Te Ara Oruahine in the north, traversing across the eastern slopes to the southern summit side, approximately 0.7 km long, this is the most popular track to the summit.
- **Te Ara Oruahine Track** – crosses the northern upper slope, off Waikorire track in the north round to Motukauri track to the west, approximately 0.5 km long. The majority of the track is under exposed rhyolitic bluffs across the western side of Mauao. Track is narrow.
- **Te Ara Rangiwhakaoma Track (Ocean 4x4 track)** – access from the northern campground or from Te Ara Tutanga track in the east running to the north-west along the lower eastern slopes until the intersection of Te Ara Oruahine and Te Ara Waikorire tracks. Approximately 0.5 km long.
- **Te Pae O Para Track** – south of the summit connecting Waikorire track to Motukauri track, approximately 0.1 km long.
- **Te Ara O Tūtauaroa (Goat track)** – located on the western side of Mauao, connecting Te Ara Tutanga to Oruahine track via a steep gully track, approximately 0.2 km long. Track is narrow.
- **Te Ara Taumata O Mauao Track** – connecting Mauao Summit to Motukauri track, orientated west to east along the summit, approximately 0.2 km long.
- **Campground** – the campground is located at the eastern base of Mauao, covering approximately 4.5 Ha. The campground consists of permanent holiday cabins, areas for tent camping, campervan and caravans.

Many archaeological and cultural sites are located across Mauao. These are shown on the site location plan in Appendix A.

Buried utility services are located across Mauao, with fire water mains (150mm dia HDPE) located under Motukauri track and Te Ara Rangiwhakaoma track extending off Te Ara Rangiwhakaoma track to the north-west side of Mauao. Hydrants are located at several points across the northern southern sides of Mauao. The reservoir water main pipe (450 mm dia PE100) runs under Motukauri track towards the east.

The campground has a mixture of underground stormwater, wastewater and water main infrastructure.

A site plan is included in Appendix A.

A more detailed description of Mauao from our site observations and the engineering geological characteristics are discussed in the site investigation section below.

Desk study

Historical aerial imagery

We reviewed historical aerial images^{3 4} for the site, images relevant to our site assessment are summarised in Table 1 below and attached in Appendix B for reference.

Table 1: Review of historical aerial imagery.

Aerial Imagery Date	Description
1943	- Mauao is covered by vegetation including trees across central and north-western side - the remainder of Mauao is covered by grass, likely for pasture grazing - Te Ara Tutanga track appears to be visible around the base of Mauao - Oruahine track and Motukauri track appear to be visible - Several landslide scarp features are visible across the southern and south-eastern slopes - Several landslide geomorphology features visible along coastline at base of Mauao - Creep features visible across eastern slope - Bluff outcrops visible along north-western and south-eastern summit ends - Boulders visible across north-western slope below bluffs - Sporadic boulders are visible across the eastern and northern slopes - Sport fields located in the current position of campground - Cut slope exposed above campground to the west - Residential development to the east
1953	Several landslide scarp features still visible across the southern and south-eastern slopes
1959	- Te Ara Rangiwhakaoma track being constructed from northern campground linking to Oruahine Track. - Minor earthworks visible at the intersection of Te Ara Rangiwhakaoma track and Oruahine track - Te Ara Rangiwhakaoma track is visible across the eastern slope, appears to have been built on landslide debris - Reservoir tank and Motukauri track constructed on southern slope - Fill appears to be spread across top of slope opposite the tank - Smaller tank and track constructed off Motukauri track in south-east slope - Campground development to the north, of existing campground - Several landslide scarp features still visible across the southern and south-eastern slopes
1978	- Southern campground development - Motukauri track extended from reservoir to summit, minor earthworks visible to create track - Residential development to east - Waikorire track constructed from north around the eastern slope to the summit
1986	- Further development of the campground in the east - Vegetation clearance across northern slopes and summit - Further development to the east
1992	Tracks alignments are similar as per today
2003	Landslide geomorphology features very noticeable around Mauao base, above Te Ara Tutanga track, above northern campground and across southern and south-eastern slopes.
May 2005	- Fire occurred across summit and northern slopes, removing vegetation and exposing bluff outcrops - Landslide feature above Te Ara Tutanga to the north of northern campground - Large landslide feature below Motukauri Track, across south-western slope, debris visible to coastline
2012	Landslide feature above Te Ara Tutanga to the north of northern campground

³ Retrolens.co.nz, date accessed 16.05.2025

⁴ Google Earth Pro, date accessed 16.05.2025

	• Landslide feature below Waikorire track on eastern northern slope • Large landslide feature above Motukauri track on southern slope • Landslide feature below Motukauri track, across south-western slope, debris slope planted
August 2023	• Large landslide feature above Te Ara Tutanga track on southern slope • Landslide feature above Te Ara Tutanga track and below Motukauri track on south-eastern slope

Geological setting

Mauao is a volcanic rhyolitic dome.

The GNS geological map⁵ shows Mauao comprises Minden Rhyolite Subgroup of the Whitianga Group. The GNS map indicates Holocene ocean beach deposits surrounding Mauao and across the campground area.

Minden Rhyolite Subgroup of the Whitianga Group

The GNS describes this unit as, “flow-banded rhyolite to rhyodacite lava; often as domes or dome complexes, some highly eroded”. The rhyolitic rock in place may have weathered into cohesive residual soils of varying thickness.

Holocene ocean beach deposits

The GNS describes this unit as, “beach deposits consisting of marine gravel, sand and mud on modern beaches”.

Volcanic Ash

We expect unmapped deposits may include a varying thickness of volcanic ash deposits such as tephra, tuff and lapilli from previous eruptions which may mantel the volcanic dome.

Colluvium

We expect unmapped deposits may also include varying thickness of colluvium and organic colluvium which are likely to be present at the base of slopes and within gullies associated with previous landslide debris and fluvial action. Cobbles and boulders of rhyolitic origin are also expected to be present within colluvial soils from previous rockfall or landslide events.

Anthropogenic soils (Uncontrolled Fill)

Based on the historical imagery, archaeological sites and infrastructure across Mauao may have left anthropogenic soils. We anticipate uncontrolled and controlled fill soils to be present along tracks, and along track shoulders from previous earthworks. Track related fill is likely to be granular aggregates. Uncontrolled fill along track shoulders is likely to be reworked natural soils.

The archaeological sites indicate Mauao has had extensive modification through history. The modification is expected to be limited to shallow excavations to form level terraces.

Recorded faults

There are no recorded faults in the immediate vicinity of the site.

NZGD

We reviewed the New Zealand Geotechnical Database (NZGD) for Mauao. There was no available data for Mauao, but there was several hollow stem augers, test pits and rotary cored borehole records for the campground area located in the east.

⁵ 1:250,000 Geological Map of New Zealand (QMAP). New Zealand Geology Web Map. GNS, 2013. <https://data.gni.cri.nz/geology>.

Rotary cored boreholes

The boreholes were completed in 1990 for the water well for the hot pools. The boreholes generally encountered varying layers of sand and clayey sand to approximately 50 m below ground level (bgl), underlain by weathered rhyolite, becoming hard rhyolite from 90 m bgl to 154 m bgl.

Hollow stem auger

The augers were completed in 2000 on the upper levels of the campground, generally recording stiff clayey silt to 5 m bgl, becoming silty sand to 8 m, underlain by pumiceous sand to 10.5 m bgl. SPT N values ranged between 2 and 7, with an 18 at 10.5 m bgl (end of hole).

Test pits

The test pits were completed in 2000 across the campground, generally recording stiff clayey SILT up to 3.0 m bgl, with groundwater encountered at 2.7 m bgl.

GNS landslide database

We reviewed the GNS landslide database⁶ which has mapped known landslides across Mauao. The majority of recorded landslides are recorded as triggered from a May 2005 rain event and are described as rotational or translational movements. The database includes:

- 16 recorded small landslides and 1 moderate landslide on the Te Ara Tutanga walking track (base track).
- 2 recorded small landslides in/near the northern campground.
- 1 recorded small landslides on the intersection of Oruahine and Waikorire track.
- The remedial works to remove rockfall on the bluff above Waikorire track in 2003 are recorded.

Previous records

TCC have provided us with previous engineering geology and geotechnical reports and monitoring records for the Mauao. We have extracted and catalogued the relevant geohazard events recorded by the reports and records. The geohazard register is presented in Appendix D.

We have summarised some of the key points from the previous records below.

Previous records (Dr Laurie Richards, 1999)

Dr Richards completed a study on the slope stability of the Mauao, and associated risks posed to the public using the tracks. The Avalon report from 2003 and WSP report from 2022 both summarise the key points of the Dr Richards assessment. A copy of Dr Richard's report was not available at the time of writing this report. Key points of the assessment summarised in the other reports were:

- Recorded rockfall from the summit bluffs was low during the study
- Rockfall risk to users for Mauao was considered to be an 'acceptable level'
- Oversteepening of the Te Ara Tutanga track upslopes, resulting in landslides
- Mauao slopes comprise landslide debris and colluvium soils that are sensitive to slope toe movement
- Caravan sites in the campground near steep slopes are at risk of landslide and rockfall.

⁶ <https://data.gns.cri.nz/landslides/wms.html>, date accessed 15/05/2025

Previous records (Avalon, 2003-2024)

Avalon have completed landslide and rockfall monitoring and removal services on behalf of TCC between 2003 and 2024 for Mauao. There have been numerous monitoring reports and rockfall risk assessment reports within the last 20 years.

There have been 6 x recorded rockfall near misses to the general public in the last 20 years. The near misses were recorded on Te Ara Tutanga, Te Ara Oruahine, Te Ara Waikorire tracks. One recorded event was rockfall movement that killed 2 lambs on the eastern slope above the campground.

There have been no recorded injuries or deaths from geohazard events in the last 20 years

Avalon in 2003, subdivided Mauao slopes into 6 zones (zones 1 to 6) with similar engineering geology/geomorphology characteristics. The zones were located at the following:

- Zone 1 – area above the campground (Campground)
- Zone 2 – the eastern slopes (Te Ara Waikorire)
- Zone 3 – the northern slopes, gullies & bluffs
- Zone 4 – the northwest, climbing crag & gullies/bluffs (above the NW Oruahine track)
- Zone 5 – the western slope, above and below the 4WD track (Te Ara Motukauri)
- Zone 6 – all summit areas above the slope crests

Avalon have been completing electronic distance measuring (EDM) survey monitoring of 'at risk' rockfall blocks across the summit bluffs for the last 20 years. The survey graphs indicate survey error, but using trend lines, movements of blocks across the eastern and northern bluff sides are generally less than 10 mm. In Zone 6, on the southern-eastern slope, boulders 6b 21 to 23 showed between 150 and 200 mm of movement.

We identified a total of 91 landslides, rockfall, or sinkhole events from Avalon reports over the last 20 years.

Some of the key points of Avalon's work since 2003 are summarised below⁷.

Fire in 2003

A fire in 2003, removed vegetation and trees across the summit. Avalon were engaged by TCC to map the existing bluffs, scale any loose or 'at risk' blocks and determine the rockfall hazard in relation to the tracks and campground. Avalon completed a drill and blast program to remove an identified rockfall hazard on the bluffs at the eastern side of the summit. The risk from this identified rockfall hazard in relation to the campground was deemed unacceptable by TCC. As a result of the blasting, several blocks (1.2m³) and boulders bounced and rolled into the southern campground area.

Earthquake in July 2004

Seismic activity combined with heavy rainfall in July 2004 triggered landslides. The activity consisted of magnitude 3.0 to 5.4 earthquakes with peak ground acceleration estimated to be 0.05 to 0.15g, a 1 in 10 year return period. The seismic activity resulted in 5 recorded landslides and 1 secondary rockfall movement following a landslide.

Extreme rainfall in May 2005

Extreme rainfall event in May 2005, consisted of 350 mm rainfall in 24 hrs, a 1 in 150 year return period. The extreme rainfall resulted in 54 recorded landslides and secondary rockfall movements

⁷ Note: This is a high level desk study summary of the Avalon Ltd works over the last 20 years. A detailed peer review of Avalon's previous works is outside the scope of this report.

Previous risk assessment - 2006

In 2006, Avalon completed a quantitative rockfall risk assessment⁸ for Mauao. The rockfall risk assessment was undertaken using similar principles and methods as outlined in AGS, 2007⁹. We have briefly summarised the risk assessment below.

Assessment inputs

- The risk assessment used rockfall event data collected by Avalon since 2003
- The risk assessment divided the slopes into 6 zones where engineering geology and failure mechanisms are similar which includes sections of the Te Ara Tutanga walking track (base track), Te Ara Oruahine track, Te Ara Waikorire track and campground
- The assessment estimated rockfall sizing (0.15m, 0.3m and 1m diameter), frequency and travel distance
- The assessment identified landslide/rockfall triggers including weathering, seismic, intense rainfall, persons off track, and animals
- Main source for rockfall is the bluffs and oversteepened colluvial slopes
- The rockfall assessment considered track users and campers under the following cases:
 - A person walking the track/camping once (annual)
 - A person walking the track every day/week/camping permanently
 - A person waking the tracks once a week or camping for 1 month
 - A person static for 1 hour
- A landslide risk assessment was also undertaken for large historical landslide features (ID001, ID002) on the eastern slope above the southern campground area.
- The landslide risk assessment uses a 1 in 500 year return period intense rainfall event as the trigger case
- The risk assessment categorised the risk as below. (For comparison, we have provided latest Department of Conservation (DOC) NHRA thresholds for a 'lower risk' site):
 - Not tolerable - $\geq 1E-5$ (Latest DOC thresholds $> 1E-5$)
 - Tolerable $< 1E-5 \geq 1E-6$ (Latest DOC thresholds $> 1E-6$ to $1E-7$)
 - Acceptable $< 1E-6$ (Latest DOC thresholds $< 1E-7$)

As is shown, the risk tolerance level differs between the 2006 assessment and the latest DOC guidance thresholds. Therefore, results from the 2006 assessment that were calculated as 'acceptable' or 'tolerable' may actually be 'not tolerable' using the latest thresholds.

Assessment outputs

- The assessment identified rockfall risk is 'not tolerable' for a person walking the track every day/week/camping permanently for Oruahine, Waikorire, or campground.
- The assessment identified rockfall risk is 'not tolerable' for a person walking tracks once a week or camping for a month and person static for 1 hour for the Oruahine track
- The remainder of the tracks under the assessment cases were either 'tolerable' or 'acceptable' risk from rockfall.
- The report recommends rockfall treatment options to manage the risk from rockfall, they include:
 - Passive options, such as accepting the risk (acceptable risk tolerance) or avoiding the risk (track closure)

⁸ Avalon Industrial Services Ltd, 'Mauao slopes; May 2006 Rockfall & Landslide Risk Review', Ref Avalon Report No. 0627A, July 2006

⁹ Australian Geomechanics Society, 'Practice note guidelines for landslide risk management', Australian geomechanics vol 42 No1. March 2007

- active options, such as reducing the likelihood by rock scaling, reducing the consequence, rockfall catch fences, and monitoring and warning systems
- The landslide risk was analysed as tolerable, with further considerations such as detailed geotechnical site investigation to better understand the landslides conditions.

Previous records (Terrane, 2009)

Terrane Consultants Ltd¹⁰ completed a landslide inspection on 18th March 2009 in response to a heavy rainfall event on 17th March 2009 which triggered up to 12 landslides along the southern half of Te Ara Tutanga (base track). Terrane Consultants Ltd also previously completed a report in August 2008, which was not available at the time of writing this report. Some of the key points from the March report are summarised below:

- 12 landslides were within manmade cut batters on the upslope side of the base track
- generally very small (<2m³)
- 3 x landslides were inspected in detail
 - 2009-1, reactivation of a previous landslide (previously occurred in May 2005 and August 2008, 8m wide soil and debris fall within a 6m high cut batter within thinly bedded tuff
 - Recommendation to clear landslide debris
 - 2009-2, slump on upslope cut batter, 6m wide, within colluvium soils, 3 x boulders exposed at the headscarp, groundwater seepage observed
 - Recommendation to remove landslide debris, remove boulders and trim slope
 - 2009-3, 3m wide shallow translational soil and vegetation failure, within soft sands and silts, minor event
 - Remove landslide debris, reestablish vegetation due to erodible soils

Previous records (Tonkin & Taylor/TCC, 2011)

TCC informed us that following the extreme rainfall event in 2011, Tonkin & Taylor completed assessment reports for a number of landslides. These reports were unavailable at the time of writing this report. TCC did provide some internal records and imagery for the 2011 event. We have categorised the 2011 landslides under one event in the geohazard register, as limited information is available to accurately add to the GIS and geohazard register. We have tried to extract relevant information and summarise below:

- Up to 80 individual landslides occurred, triggered by the 2011 rainfall event
 - 8 large landslides recorded (6 x impacting base track, 2 x impacting 4 wheel drive track)
 - 20 medium landslides recorded
 - 50 small scale landslides/wash outs
- Landslide failure mechanisms were restricted to shallow soils with few rockfalls
- Landslide debris impacting the tracks was removed and the tracks reopened
- A google earth image with assumed landslide and rockfall locations from 2011 event is shown in Figure 1 below.

¹⁰ Terrane Consultants Ltd, 'Slips, Mauao Base Track', reference 3071, 19th March 2009



Figure 1: A google earth aerial image of the Mauao with 2011 landslide event/feature locations, extracted from TCC PowerPoint slides, date unconfirmed, no legend available.

Previous records (WSP, 2022)

WSP¹¹ completed a high level qualitative slope stability risk assessment for the Te Ara Tutanga track (base track) in 2022. The assessment used a modified qualitative risk matrix based on the AGS 2007c method. The assessment was limited to landslides impacting the base track, based on a desk study and site observations. No detailed site investigation or slope stability analysis was undertaken.

Assessment inputs

- The assessment does not consider rockfall or assessed loss of life due to rockfall or landslide
- Assessment is for track asset damage only
- The assessment considered the following factors (slope gradient, geology, records of historic instability, geomorphology, groundwater seepage/overland flow paths, track width, and existing retaining walls)

Assessment outputs

- The assessment identified 55 possible landslide features that could impact the base track
- Major landslide occurred in 2017 (11,12), there is high risk to the track located along the southern side
- Landslides (51-55) recorded in 1943, 1959 and 1977, reactivation is medium to high risk to track located near base track entrance in north-east
- Landslide features (46-48) are shown as medium to high risk on Figure 7 map, but in table 5 are recorded as low to medium risk. Error in risk assignment.

¹¹ WSP, 'Tauranga City Council – Mauao Base Track, High Level Qualitative Slope Stability Risk Assessment', project no. 2-9B497.00, date 16th November 2022

- The assessment identified sections of base track, in the south, west, north and north-east at medium to high risk
- With the remainder of the track very low to medium
- The report recommends further assessment (detailed site investigation, quantitative slope stability assessment and treatment options) for high risk portions of the base track
- For low risk sites, the report recommends continued maintenance of the track and track drainage
- For medium risk sites, the report recommends regular monitoring and drainage improvements
- The report also recommends a geomorphic mapping and risk register and a GIS database to assist with risk management

TCC track visitor records

TCC provided track count data from 2016 to 2025 for Mauao. The 2024 total track count visitor data is the most recent and complete, indicating a total track count of 1.37 million over 365 days. The existing TCC track visitor records since 2016 for Mauao are summarised in Table 2 below

Mauao is generally used by the following:

- TCC Mauao rangers and other staff for maintenance etc
- TCC subcontractors for geohazard monitoring, ecology, reservoir tank maintenance etc
- the general public/tourists for hiking
- farmers and sheep stock use the southern, eastern and northern slopes for sheep grazing.

Table 2: Existing TCC track visitor records.

Year	Summit Visits (Calibrated) ¹	Te Ara Tutanga (Base track) Visits	Total Track Count Visits
2016	876,297	419,588	1,295,885
2017	903,604	339,031	1,242,635
2018	702,665	489,667	1,192,332
2019	796,671	544,912	1,341,583
2020	589,651	506,097	1,095,748
2021	576,093	499,093	1,075,186
2022	566,019	531,284	1,097,304
2023	658,949	583,923	1,242,872
2024	722,744	651,381	1,374,125
2025 ²	284,328	273,290	557,618

Notes

¹ Calibrated summit visit data provided by TCC is a sum of Waikorire, Oruahine and Motukauri track counts in both directions, totalled and divided by 2 to determine the number of visits that took place for the summit.

² 2025 track count collection data still ongoing.

Site investigation

Our investigation consisted of a site walkover with two engineering geologists accompanied by Avalon, to gain an understanding of landslide and rockfall features and mechanisms on Mauao and making observations of the geological features. We did not complete any intrusive investigation.

The key purpose of the walkover was to complete a handover from Avalon to HD Geo to provide context of the history and highlight 'at risk' areas from rockfall and landslides. The investigation included:

- walk all the tracks
- identify key locations 'at risk' from rockfall and landslides
- note any existing landslides and rockfall features along the tracks
- basic geomorphology mapping of the track and surrounding area
- complete a drone imagery survey of Mauao. The drone survey was limited to the central and northern cliffs

Geomorphology/Engineering geology characteristics

We identified and recorded engineering geology/geomorphology features at the site from our desk study, site observations, and reviewing the drone aerial imagery. We have created geomorphology plans to show topography and geomorphology features for Mauao (HD3639-103A-B-R1) these are included in Appendix C.

To discuss Mauao characteristics we have divided the site into upper slopes/summit and lower slopes/coastline. Annotated drone images showing geomorphology and images of landslide and rockfall features are shown in Figure 2 to Figure 11 below.

Upper slopes/summit

We recorded the following relevant features:

- the summit is a flat plateau, surrounded by exposed extremely steep to vertical rhyolitic bluffs (outcrops)
- there is a lookout at the eastern side of the summit
- the rhyolitic bluffs are exposed across the western, northern, and eastern upper slopes – see Figure 3 and Figure 4 below
- the rhyolitic outcrops are generally slightly weathered, moderately strong to strong rhyolite, with outcrops at the summit and above Oruahine track moderately weathered, very weak to weak rhyolite
- bluffs show evidence of rockfall movement and some 'at risk' block features present above Oruahine track
- trees are sporadically present across the bluffs, with evidence of root structures within rock joint sets, creating a root jacking trigger mechanism
- geomorphology features across the western bluff slopes, indicate natural channel features. These channel features appear to capture and direct rockfall from the upper bluffs down to Te Ara Oruahine track – see Figure 3 below.
- gravel sized rockfall debris was observed along the Oruahine track, indicating possible spalling of the rockface or minor rockfall from higher up has disintegrated as it has bounced down the cliff face
- the upper slopes across Mauao are steep to extremely steep (30 to 45 degrees) densely vegetated with native plants and trees
- minor erosion was visible across the upslope and downslopes along the tracks on the upper slopes
- historical rockfall blocks consisting of varying cobble to boulder size (100mm dia to 2m diameter) were visible within the dense vegetation across the upper slopes. The boulders were usually partially embedded in the ground or retained by trees. The debris visible generally looked stable, but these were not inspected in detail. Rockfall debris on the slopes below the main cliff source

present a secondary rockfall hazard if they were to be mobilised via erosion, animals, walkers, or earthquakes

- rock climber bolts and anchor points were observed in some locations indicating human activity across the bluffs, that could result in disturbance of 'at risk' rocks causing rockfall.
- surface water controls on the tracks generally include drainage ditches running parallel into culverts under the track, discharging onto the slopes below the track.

Lower slopes/coastline

We recorded the following relevant features:

- the lower slopes across Mauao are moderately steep to steep (15 to 30 degrees) generally covered by dense vegetation with native plants and trees across the west and sections of the east
- the lower slopes across the south, east, and north-east are covered by grass used for pasture grazing
- the lower slopes across the south and south-east have shallow creep movement visible across the surface
- there are a few landslide scarp features visible across the south-east
- historical rockfall debris is littered across the eastern and northern slopes, ranging from gravel to boulder size (60mm to >3m diameter). The boulders were usually partially embedded in the ground or on the surface. The boulders visible generally looked stable, but these were not inspected in detail.
- along the Te Ara Tutanga track along the coast, the upslopes of the track formed by track cutting were generally steep to very steep (45 to 70 degrees) covered by native vegetation and trees
- translational landslides across the upslope and downslopes were frequent along the track, exposing colluvium and volcanic ash soils
- we recorded a translational landslide (ID032, ID092) scarp feature located above Te Ara Tutanga on the western side. Reactivation of debris including rock and soil is released by shallow erosion. All debris was captured by a bund created from previous landslide debris.
- localised rhyolitic bluff outcrops are present at the western base of Mauao, along the Te Ara O Tutauaroa track. During our site visit, we identified a recent rockfall block along the track, it was approximately 200mm diameter.
- Also on Te Ara O Tutauaroa track we identified a semi-rotational landslide (ID098) above the track, which included debris partially across the track. A boulder (<2m diameter) was present in the scarp side slope, with undermining caused from erosion.
- There are gully features across the lower western and southern slopes. Based on the geomorphology they are generally formed from previous landslide movements
- Mauao's coastline was generally characterised by large boulders forming a shoreline with beach sand along the southern and north-eastern shorelines
- along the Te Ara Tutanga track, there are several retaining structures including an anchor and mesh system to stabilise a landslide below and above the track in the south-western corner
- there are gabion baskets (beneath the track) and concrete mass block (above the track) retaining walls along the Te Ara Tutanga track in the south-east.

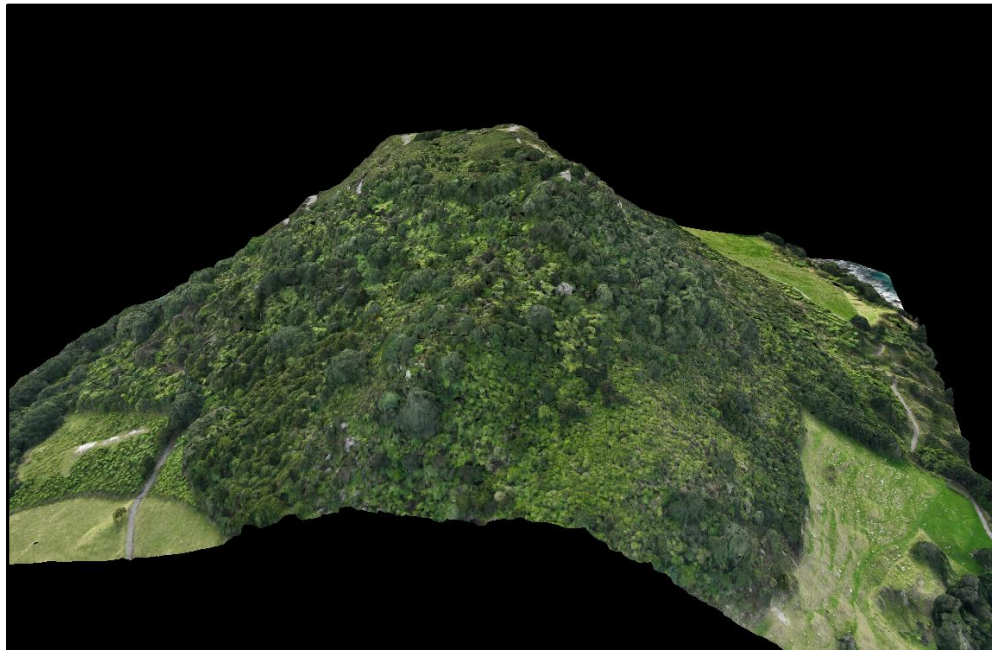


Figure 2: Incomplete drone 3D model of Mauao looking south-west, date taken 02/05/25.

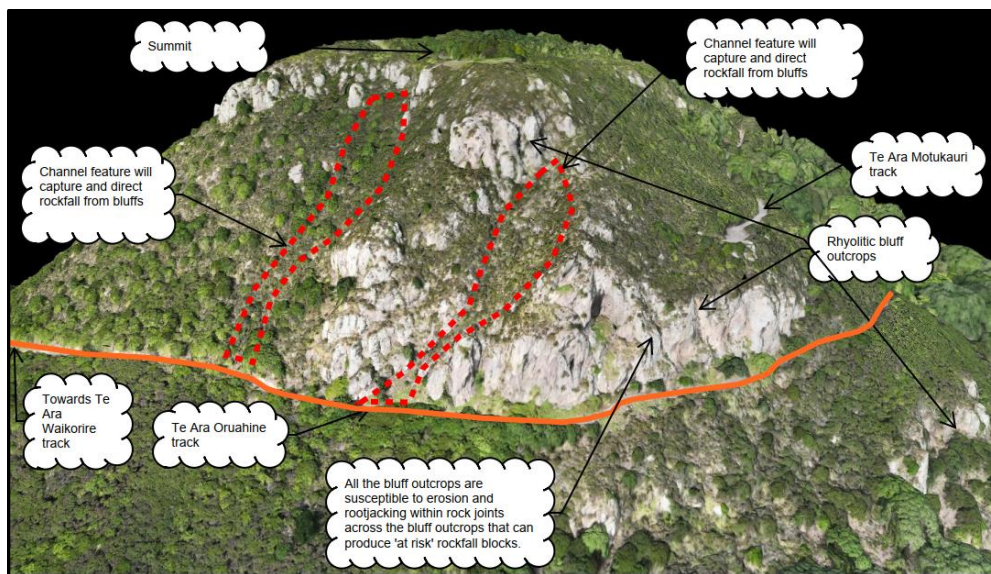


Figure 3: Annotated drone model of north-western/western Mauao looking south-east, date taken 02/05/25.

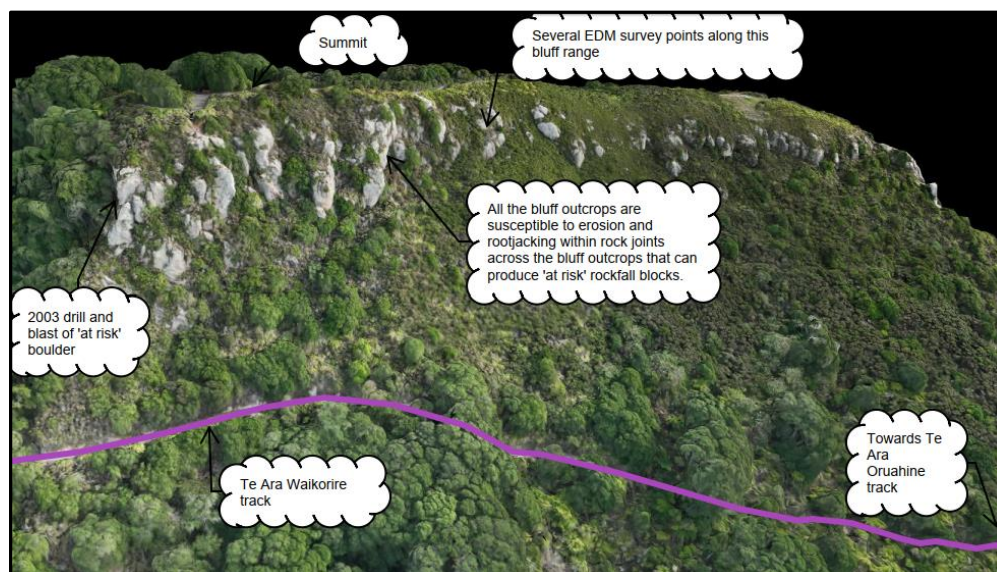


Figure 4: Annotated drone model of eastern Mauao looking north-west, date taken 02/05/25.

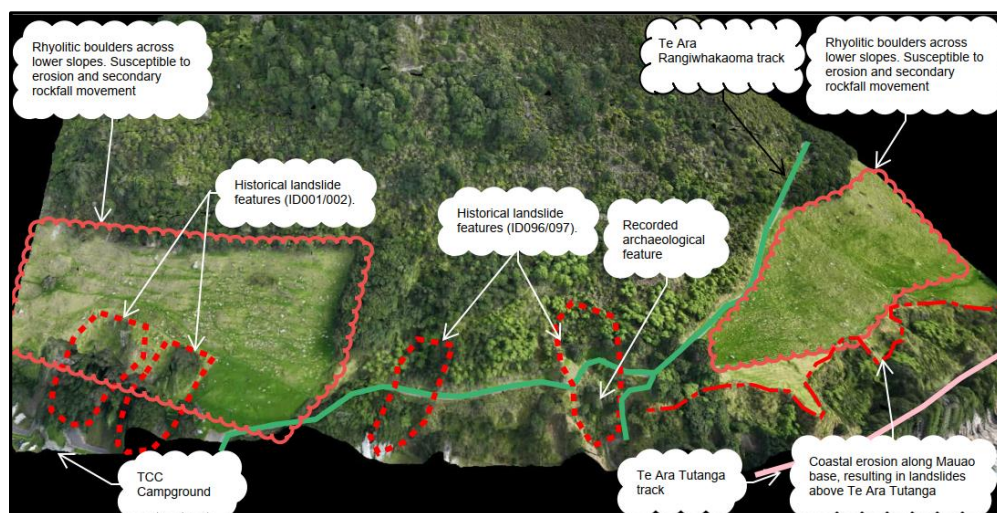


Figure 5: Annotated drone model of eastern lower slopes, looking west, date taken 02/05/25.



Figure 6: Existing translational landslide above Te Ara Tutanga track (ID043), date taken 02/05/25.

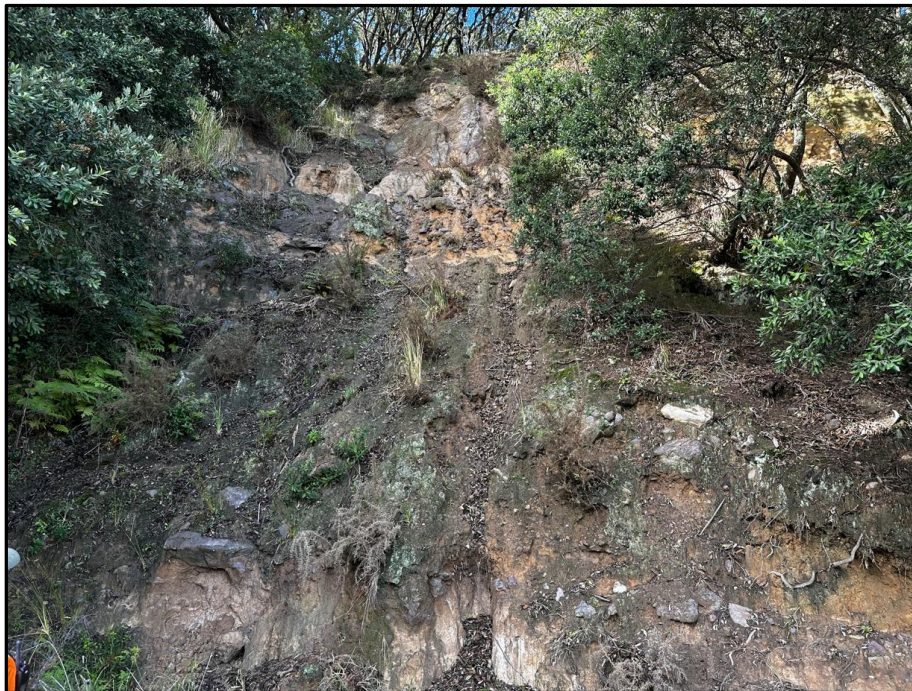


Figure 7: Existing translational landslide above Te Ara Tutanga track (ID032), date taken 02/05/25.

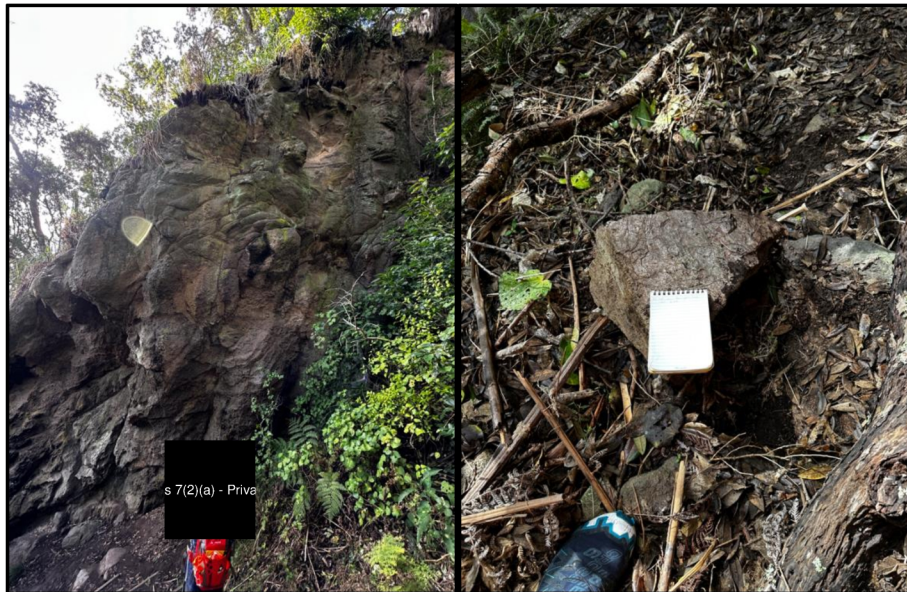


Figure 8: Recent rockfall block identified on Te Ara O Tutauaroa track (ID094), date taken 02/05/25.



Figure 9: Susceptible joints and blocks identified on bluff outcrop above Te Ara Oruahine track, date taken 02/05/25.



Figure 10: Numerous previous rockfall boulders across steep eastern slopes above campground (ID064), date taken 02/05/25.



Figure 11: Susceptible overhang on bluff top, above Te Ara Oruahine track, date taken 02/05/25.

Geotechnical assessment

Based on the desk study and site observations, tracks over Mauao are in an active geological environment that experiences landslide and rockfall geohazard events annually.

We have collated recorded geohazard events from the desk study and site investigation and catalogued them into a geohazard register presented in Appendix D.

We have identified the tracks and assets are at risk from landslides and rockfall through the following failure mechanisms and triggers, summarised in Table 3 below. For visual description of different types of landslide and rockfall see Figure 12 below.

Table 3: Summary of geohazard failure mechanisms and triggers.

Geohazard event type	Failure mechanism	Triggers	Description
Landslides	Shallow translational or semi-rotational slide	- intense/prolonged rainfall - erosion - coastal erosion - Earthquake - ground water seepage (springs)	Landslide movement typically of topsoil/colluvium/ uncontrolled fill soils on volcanic ash/weathered residual soil/shallow rhyolitic rock. 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 to 45 degrees) or where new groundwater springs occur.
	Reactivation of landslide debris from historical landslide failures.		Can cause tension cracking, slumping or debris flows such as ID096, ID097 and ID032, where debris translated onto the tracks.
Rockfall	Rockfall, sliding or toppling	- rootjacking - erosion - intense/prolonged rainfall - earthquake Human activity off track can trigger rockfall release – i.e. unsanctioned rock climbing or hiking.	Joint structures on bluff outcrops result in blocks separating from main rock body via sliding or toppling
	Reactivation of previous rockfall boulders located over the steep slopes below the bluffs	slope movement caused by: - erosion - intense/prolonged rainfall - vegetation decaying. seismic events can also trigger movement but are considered less likely.	Rockfall boulders that have previously fallen from the bluff outcrop onto slopes below. These rockfall boulders can be reactivated and roll down the slopes on to tracks. They are located above and below the tracks.
	Secondary rockfall movement in	The landslide reactivation is generally triggered by: intense/prolonged rainfall	Reactivation of the landslide debris containing previous rockfall

landslide debris flows	earthquake	boulders and debris can trigger a rockfall event
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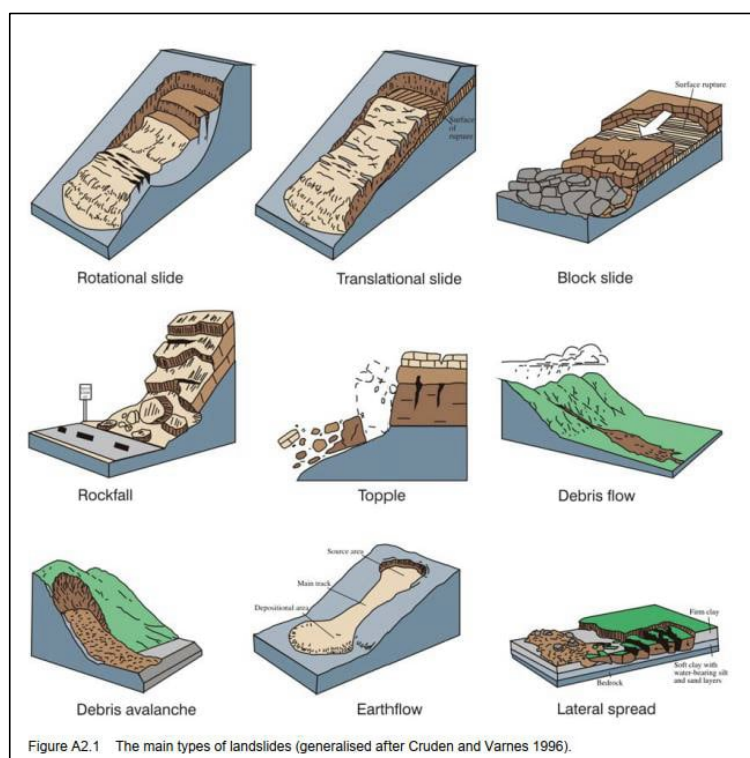


Figure 12: Different landslide and rockfall types and characteristics for visual reference¹².

Risk assessment

We have completed a high level, semi-quantitative risk assessment for the geohazards identified on site with the details and results presented in Table 4 below. The methodology used is based on the AGS2007c¹³ semi-quantitative risk assessment however, we have modified it to be applicable to this situation.

The risk assessment uses data collected from the desk study and geohazard register included in Appendix D. The identified high risk geohazard zones are shown on HD3639-108-R1 included in Appendix C. Definitions of the likelihood and consequences are included in Appendix E.

The purpose of this risk assessment is to highlight the areas or sections of track that present medium to high risk from the geohazards identified. This will provide justification to the client on where further work is needed to manage or mitigate the risk.

¹² Figure A2.1 taken from GNS Science, 'Guidelines for Natural Hazard Risk Analysis on Public Conservation Lands and Waters', Part 2: Preliminary hazard and exposure analysis for landslides, GNS science consultancy report 2020/51, June 2020-revised.

¹³ Practice Note Guidelines for Landslide Risk Management 2007" Ref: AGS (2007c) - Australian Geomechanics Vol 42 No 1 March 2007

Likelihood

The likelihood for an event on each track or asset has been determined based on the geohazard register and recorded near misses from rockfall events. Near misses have been recorded on the Te Ara Oruahine, Te Ara Waikorire and Te Ara Tutanga tracks regardless of no obvious trigger events. Historical performance of slopes and bluffs can indicate the probability of future events. Specifically, a track that has recorded more geohazard events is more likely to experience similar occurrences in the future.

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.

Consequence

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 for a rockfall within the campground is increased, as a 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. 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).

Discussion

The risk assessment has identified sections of the following tracks/assets that have a high risk from rockfall

- Western side of Te Ara Tutanga (base track)
- Majority of Te Ara Waikorire track
- Majority of Te Ara Oruahine track
- Below the lower bluff outcrops at the west end of Te Ara O Tutauaroa track (goat track)
- Northern and southern areas of the upper Campground

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 summit 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 risks have been assessed for tracks/assets, there are still geohazards present that could occur during a triggering event, but we have estimated a lower risk based on several qualitative factors such as less popular tracks, the geomorphology/topography, and number of recorded events.

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 tracks 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 sections of track WSP identified as high risk to the track, we have 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.



Table 4: Semi-quantitative geohazard risk assessment

Track/Asset	Geohazard event type	Geohazard present to impact track/asset (Y/N)	Number of recorded geohazard events	Risk to life/users			Risk to track/asset		
				Likelihood	Consequence	Qualitative risk to life/track user	Likelihood	Consequence	Qualitative risk for track/asset
Te Ara Tutanga track (base track)	Landslides	Y	40	Possible	Medium	Moderate	Possible	Medium	Moderate
	Rockfall	Y	1	Possible	Major	High	Possible	Insignificant	Very Low
Te Ara Motukauri Track (4WD track)	Landslides	Y	16	Possible	Minor	Low	Possible	Minor	Low
	Rockfall	Y	5	Unlikely	Major	Moderate	Unlikely	Insignificant	Very Low
Te Ara Waikorire Track	Landslides	Y	1	Possible	Minor	Low	Possible	Minor	Low
	Rockfall	Y	4	Likely	Major	High	Likely	Insignificant	Low
Te Ara Oruahine Track	Landslides	Y	4	Possible	Minor	Low	Possible	Minor	Low
	Rockfall	Y	10	Likely	Major	High	Likely	Insignificant	Low
Te Ara Rangiwhakaoma Track	Landslides	Y	2	Possible	Minor	Low	Possible	Medium	Moderate
	Rockfall	Y	1	Unlikely	Major	Moderate	Possible	Minor	Low
Te Pae O Para Track	Landslides	Y	0	Unlikely	Minor	Very Low	Unlikely	Minor	Very Low
	Rockfall	Y	0	Unlikely	Major	Moderate	Unlikely	Insignificant	Very Low
Te Ara O Tutauaroa (Goat track)	Landslides	Y	1	Possible	Minor	Low	Possible	Minor	Low
	Rockfall	Y	1	Possible	Major	High	Possible	Insignificant	Very Low
Te Ara Taumata O Mauao Track	Landslides	Y	0	Unlikely	Minor	Very Low	Unlikely	Insignificant	Very Low
	Rockfall	N	0	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
TCC_reservoir tank including underground water main pipes under Motukauri Track	Landslides	Y	1	Possible	Minor	Low	Possible	Medium	Moderate
	Rockfall	Y	0	Unlikely	Major	Moderate	Unlikely	Medium	Low
TCC_campground	Landslides	Y	2	Possible	Medium	Moderate	Possible	Medium	Moderate
	Rockfall	Y	6	Possible	Major	High	Possible	Major	High
Mauao archaeological sites	Landslides	Y	3	Not applicable	Not applicable	Not applicable	Possible	Medium	Moderate



	Rockfall	N	0	Not applicable	Not applicable	Not applicable	Unlikely	Minor	Very low
Notes Not Applicable – indicates no viable hazard present, so risk is negligible. The recorded geohazard events are based on the desk study including historical aerial imagery, previous records and HD Geo site visit collated into the geohazard register. There are limitations that this does not include every geohazard event that has occurred along these tracks/assets. Semi-quantitative risk assessment is limited to risk matrix and recorded events.									

Geohazard risk management options

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.

Table 5: Geohazard risk management options

Geohazard event type	Risk management option	Risk management option description
Landslides/Rockfall /Erosion	Passive risk management for Low to Moderate risk	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 - TCC Mauao rangers maintain regular visual inspections and update the geohazard 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 Maintenance/minor physical works - install permanent fencing such as timber post & rail to reduce unsanctioned track user movements over the cliffs and slopes - formalise the bund and fence to capture rockfall or landslide debris below ID032 - Implement erosion controls such as replanting and erosion matting (Bio Coir or similar) to minimise ongoing erosion while vegetation regenerates - Maintain all surface water controls such as repairing culverts, adding culvert socks or flumes, ensuring swales and drain ditches are clear of debris.
	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 guidelines¹⁴) 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 - the results of this assessment will justify the level of mitigation required to reduce the risk to acceptable levels Physical works/Engineered structures - track retreats (offsetting the track from the hazard such as an landslide) - track realignments (if significant hazards are present on the track, rerouting the track around the hazard could reduce the risk) - buttressing such as rock buttress or earthfill buttresses for landslides - engineered structures such as retaining walls for landslides - engineered timber structures such as staircases or bridges over or around the hazards - rock face scaling to remove loose and at risk blocks - active rockfall protection systems such as mesh and nails Track Closure - if a detailed risk assessment indicates the risk is intolerable, and further mitigation options are considered unfeasible, then track closure may need to be considered
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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, 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) guidance¹⁵. 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:

- 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)

¹⁴ GNS Science, 'Guidelines for Natural Hazard Risk Analysis on Public Conservation Lands and Waters', Part 3: Analysing Landslide risk to point and linear sites, GNS science consultancy report 2020/52, June 2020-revised.

¹⁵ GNS Science, 'Guidelines for Natural Hazard Risk Analysis on Public Conservation Lands and Waters', Part 3: Analysing Landslide risk to point and linear sites, GNS science consultancy report 2020/52, June 2020-revised.

- 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.

We recommend that TCC Mauao rangers maintain a site geohazard record and provide the information to HD Geo to update the geohazard register.

HD Geo will undertake geohazard inspections of Mauao in 6 months' time and 12 months following that. This will create a baseline of key features identified so we can better understand how the site changes over time.

Limitation

This report has been prepared for Tauranga City Council, for the purposes detailed above and may not be relied on by any other party for any other purposes. This report contains an assessment based on a site walkover, our desktop study, and site observations. Inferences about the conditions at the site have been made based on the desk study, site observations, and our understanding of the geological environment in which the site lies. Due to the large area, bush and vegetation, some features may not have been identified.

This report contains a qualitative risk assessment to estimate the current risk to the track user and asset from the geohazards identified. Our assessment is based on a desk study and brief site walkover and a visual assessment only, which will not identify all hazards at the site. The results of this assessment should be used by the asset owner/manager to determine the priority of this site for further geotechnical investigation, assessment, and design. A detailed quantitative risk assessment may indicate the risk presented is lower or higher than estimated in this assessment.

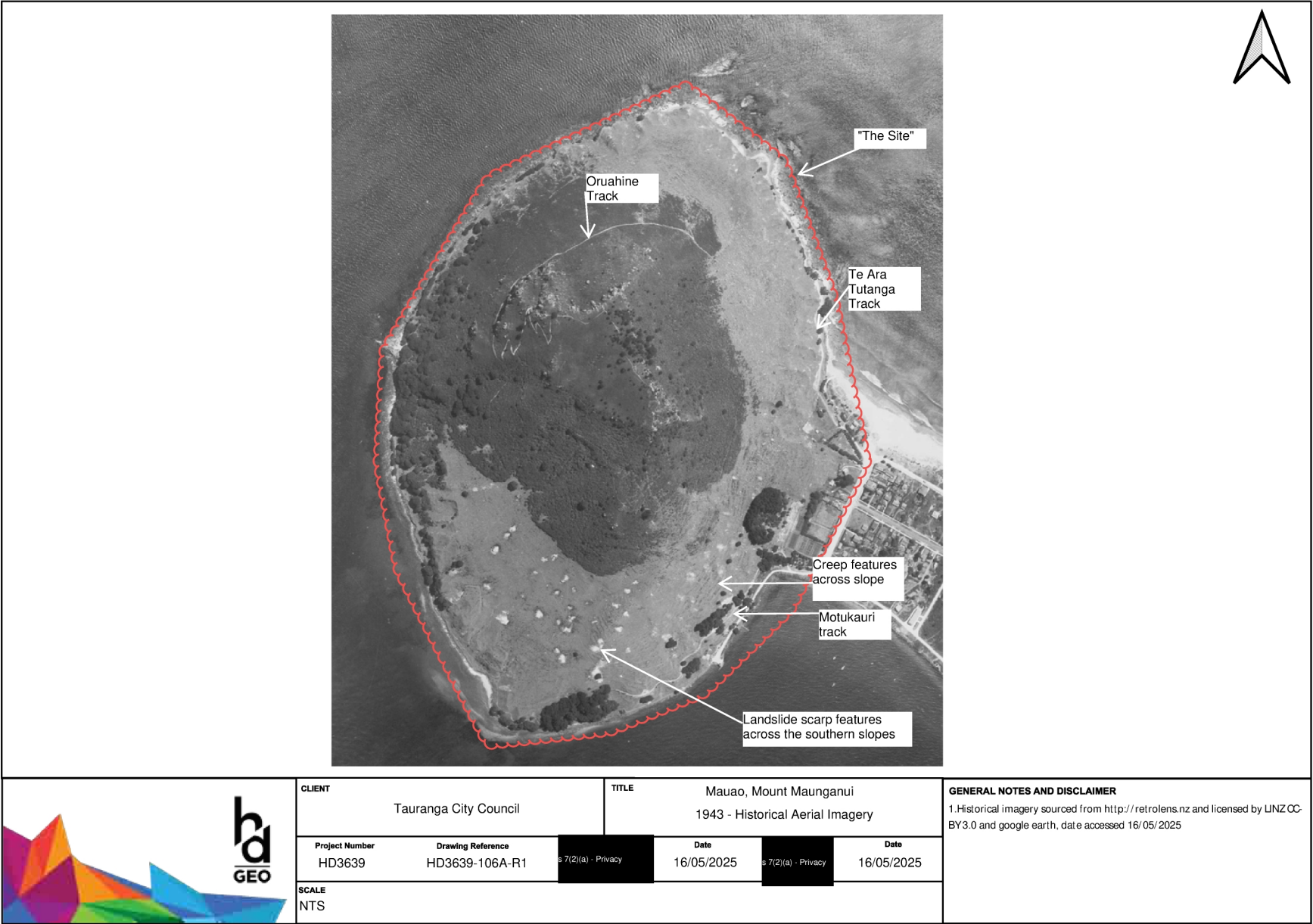


APPENDIX A – SITE PLAN





APPENDIX B – HISTORICAL AERIAL IMAGERY















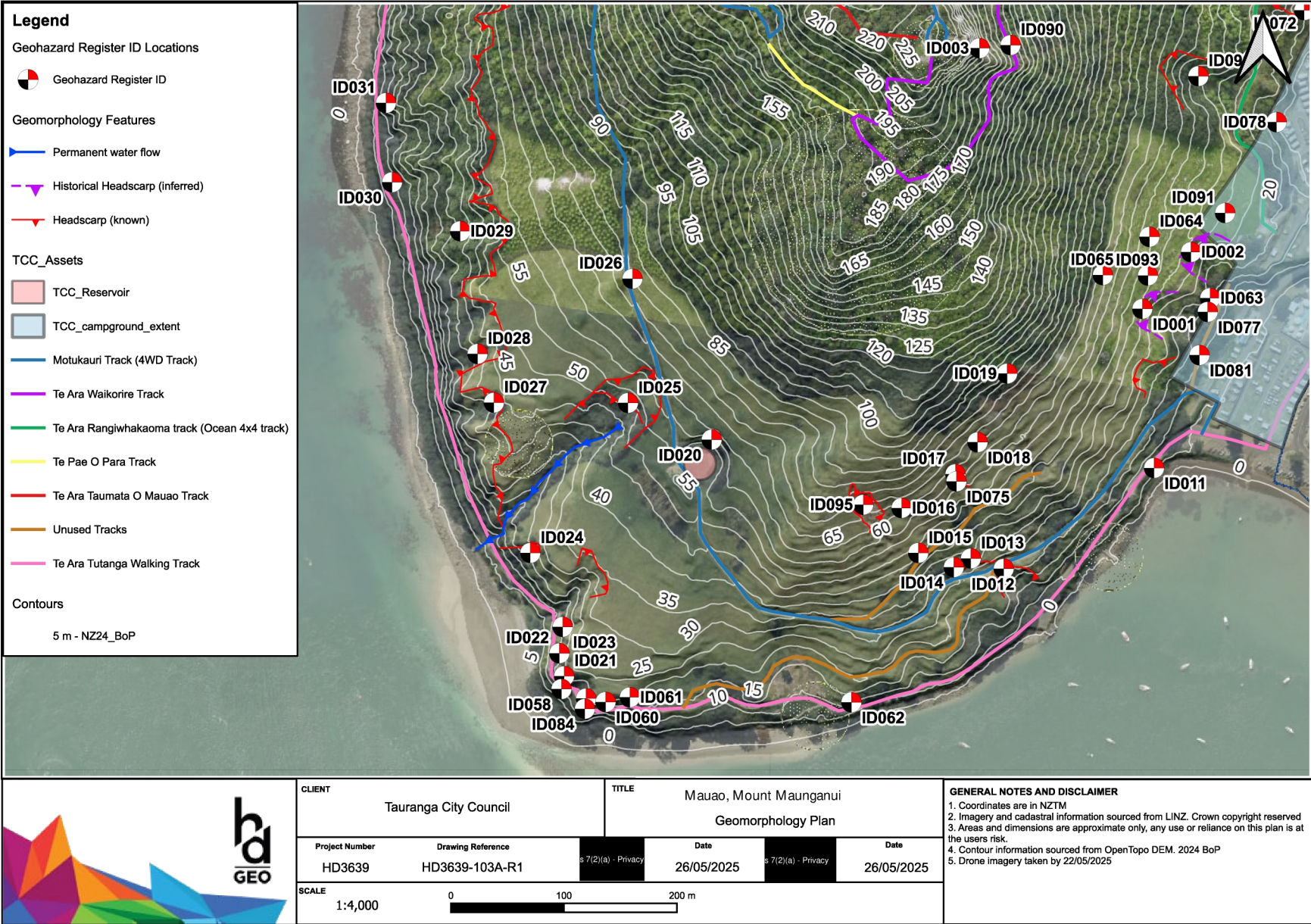


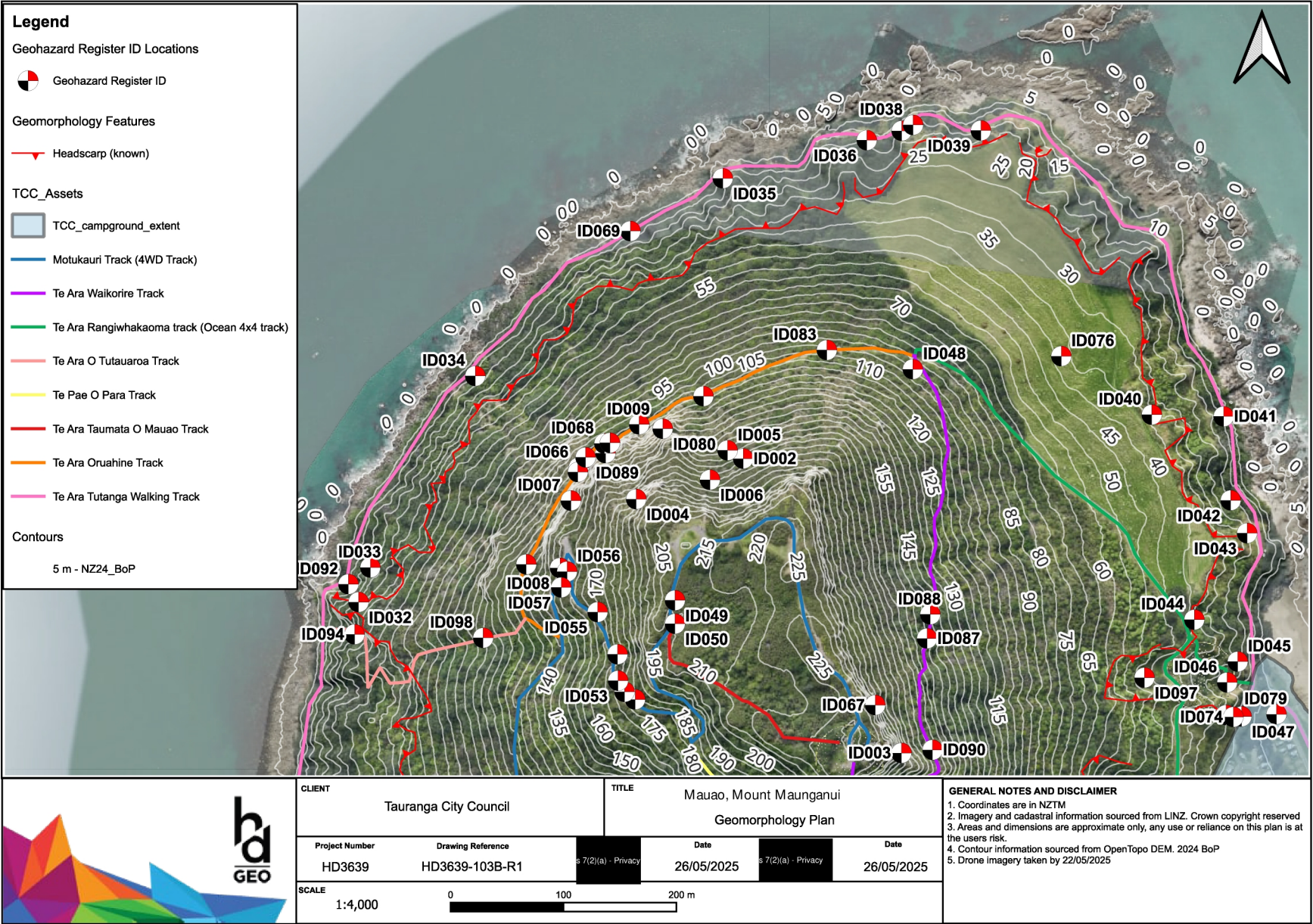


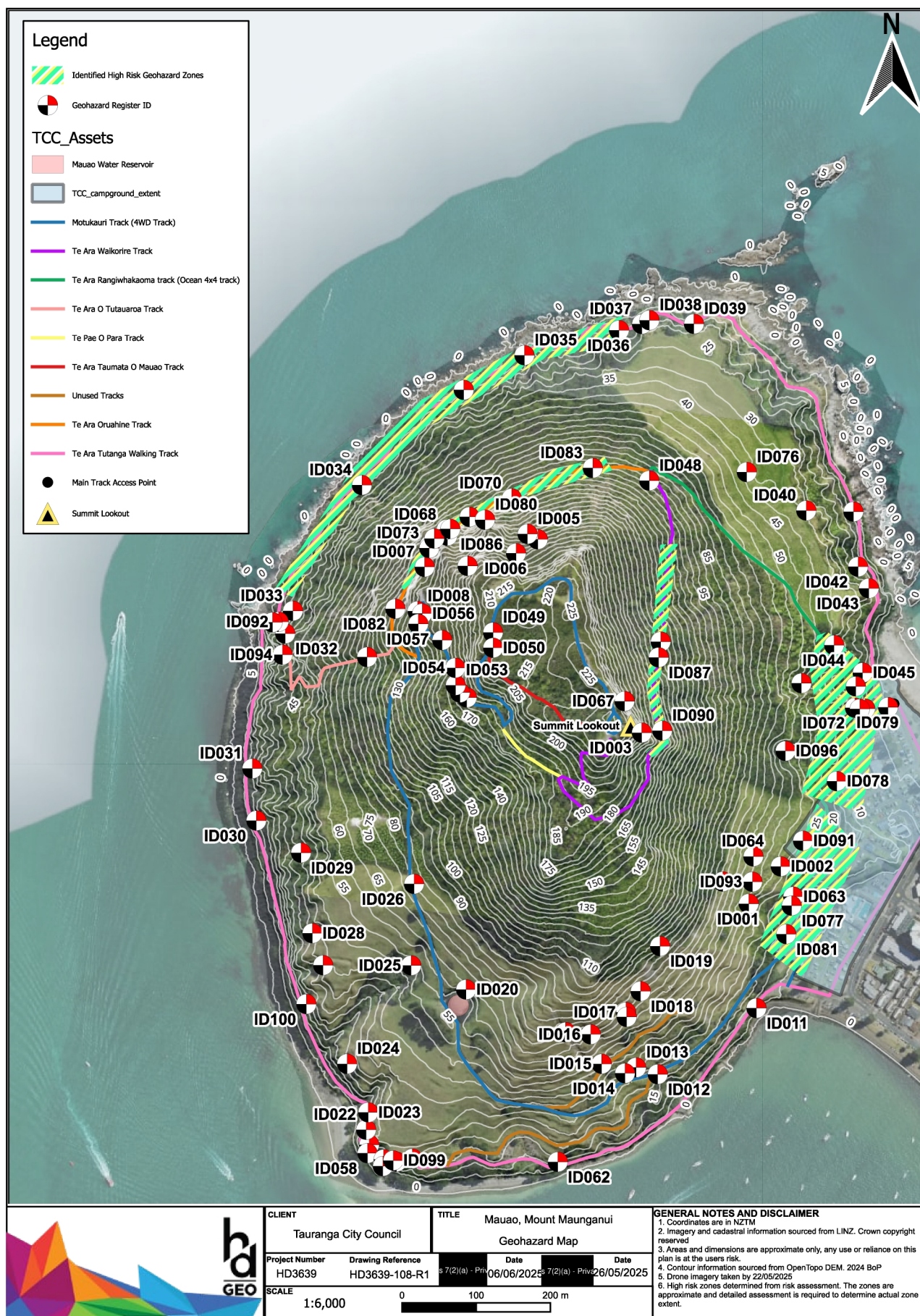




APPENDIX C – GEOMORPHOLOGY PLANS AND GEOHAZARD REGISTER LOCATIONS









APPENDIX D – GEOHAZARD REGISTER

Register title Mauao Geohazard Register
Client/Asset owner Tauranga City Council
Geotechnical Consultant HD Geo Ltd
Register last updated 6/06/2025 16:55

Register ID	Previous Report IDs	Relevant Asset/Track	Event occurrence date	Geohazard type	Event description	Estimated landslide size/ volume (m³)	Estimated rockfall blocks number/size (m³)	Possible trigger event	Source of Information	Event location (coords NZTM 2000 /elevation m AOD) - See GIS Map	Additional comments/ Remedial works
001		TCC_Campground	unknown	Landslide	Large historical landslide features above campground - event unknown, approx. 46m wide x 71m long x 4m deep	13000		Unknown	Historical features		
002		TCC_Campground	unknown	Landslide	Large historical landslide features above campground - event unknown 40m wide x 50m long x 4m deep	8000		Unknown	Historical features		
003	1a	TCC_Campground	1/11/2003	Rockfall	Bush fire resulted in exposed landslide and rockfall hazard features - including a column jointing risk that could affect campground			Fire	Avalon report no. 0314, 2003 & Avalon report No. 0404, 2004		explosives + rock scaling to remove the immediate rockfall hazard. Blasted boulder were recorded reaching the campground.
004	NW slopes above Oruahine and base tracks	Te Ara Oruahine Track	1/01/2004	Rockfall	TCC ranger spotted boulder (200mm movement)				Avalon report no. 0627 A, 2006		avalon scaled with crowbar, boulder crossed Oruahine track and rolled across base track
005	Colluvial slopes		1/07/2004	Landslide	<1m2, shallow (<200mm) landslide/rain scour scars present on slopes	1		Rainfall	Avalon report no 0404, 2004		
006	Zone 3, mid-way between 3c and 3e	Te Ara Oruahine Track	1/07/2004	combination landslide and rockfall	larger landslide in colluvium released 1 x boulder (<0.6m3) travelled 85m vertically and 135m horizontally, a few boulders recorded between 0.15m3 and 0.3m3. Impacted the Oruahine track			Combination seismic and 0.6 Rainfall	Avalon report no 0404, 2004		
007	NW oruahine track, below climbing crag	Te Ara Oruahine Track	1/07/2004	Landslide	15 x small translational landslide above the track (1m3 to 3m3), failing from colluvium exposed by track cuts and debris on to tracks	3		Combination seismic and Rainfall	Avalon report no 0404, 2004		
008	4WD track below hairpin bend	Te Ara Motukauri (4WD track)	1/07/2004	Landslide	1 x tension cracks landslide below track (10m3), 100mm drop	10		Combination seismic and Rainfall	Avalon report no 0404, 2004		
009	3f	Te Ara Oruahine Track	1/07/2004	Landslide	1 x tension cracks landslide below track(10m3), 100mm drop	10		Combination seismic and Rainfall	Avalon report no 0404, 2004		
010	exact location not specified	Te Ara Oruahine Track	1/07/2004	Landslide	scouring within colluvium slopes	2		Rainfall	Avalon report no 0404, 2004		
011		Te Ara Tutanga Track (Base 1 Track)	18/05/2005	Landslide	Dropout below pilot quay sealed road, 15m long, head wait up to 3m high, >80deg, 60mm dia plastic pipe exposed	45		Rainfall	Avalon report no. 0534 B, 2005		Remedial works - possible MSE, 29/11/2007
012		Te Ara Motukauri (4WD 2 track)	18/05/2005	Landslide	dropout, semi-rotational landslide below 4WD track at culvert location, slip surface, 6m wide x 10m long x 3m deep, landslide in road fill, water main trench fill, underlying colluvium. Culvert possibly backing up. During observation culvert flow remained significant. material released include boulders, swept down to shoreline across parking area. springs are present in this vicinity	180		Rainfall	Avalon report no. 0534 B, 2005		Remedial works - clearing, minor realignment works
013		Te Ara Motukauri (4WD 3 track)	18/05/2005	Landslide	Landslide immediately above 4wd track (lower 2m is in cut slope) 8m wide x 6m long x 3m deep, sandy colluvium (little rock, no boulders). Debris flowed across base track to shoreline, slip surface appears to be pale brown hard and clayey surface (weathered ash)below windblow sand deposits. clay layer lower permeability directed flow and daylighted at 4wd track level. tension cracks in surface above up to 2m back from crest	145		Rainfall	Avalon report no. 0534 B, 2005		Remedial works - clearing, minor realignment works
014		Te Ara Motukauri (4WD 4 track)	18/05/2005	Landslide	10m, 4WD track from 3. small landslide with similar characteristics, 2 x 2 x 1m	4		Rainfall	Avalon report no. 0534 B, 2005		Remedial works - clearing, minor realignment works
015		Te Ara Motukauri (4WD 5 track)	18/05/2005	combination landslide and rockfall	landslide 40m (up slope distance - above 4WD track) 2 x 2 x 1.5m, in colluvium. Debris includes rock swept onto track	6		Rainfall	Avalon report no. 0534 B, 2005		
016		Te Ara Motukauri (4WD 6 track)	18/05/2005	combination landslide and rockfall	Landslide 75m (upslope distance) above 4WD track, 6m wide x 5m upslope x 2m deep. Landslide colluvium from above pale less permeable denser clayey surface. Colluvium appears to locally have been 50% rock. Debris includes boulders crossed onto 4WD track 1 x 0.6m3 (800mm) boulder came to rest adjacent to track. 3 x boulders 0.15m3 (500mm), 10 x rocks 0.03m3 (300mm) crossed the 4wd track	60		0.6 Rainfall	Avalon report no. 0534 B, 2005		
017		Te Ara Motukauri (4WD 7 track)	18/05/2005	combination landslide and rockfall	Landslide 100m (upslope distance above 4wd track), 2m wide x 2m upslope x 1m deep. Moderate seepage, debris including rock swept onto 4wd track. 1 x 0.6m3 boulder at rest on slope 6m below slip scarp.	4		0.6 Rainfall	Avalon report no. 0534 B, 2005		
018		Te Ara Motukauri (4WD 8 track)	18/05/2005	combination landslide and rockfall	Landslide 120m (upslope distance) above 4WD track, 3m wide x 3m upslope x 1m deep, debris include rock swept to 4WD track, rock boulders at rest on old farm track mid-slope. Boulders in unstable positions on slip scarp	9		Rainfall	Avalon report no. 0534 B, 2005		
019		Te Ara Motukauri (4WD 9 track)	18/05/2005	Landslide	Landslide in scrub 180m (up slope distance above 4WD) 4m wide x 3m upslope x 1m deep, slip of colluvium from above pale less permeable and denser clayey surface, debris including rock swept into paddock below	12		Rainfall	Avalon report no. 0534 B, 2005		
020		10 Reservoir	18/05/2005	Landslide	Landslide from crest of cut slope behind water tank, 3 x 4 x 3m, tank side barreir was effective and trapped debris	36		Rainfall	Avalon report no. 0534 B, 2005		

021	Te Ara Tutanga Track (Base 11 Track)	18/05/2005	Landslide	Landslide above base track 2m wide x 10m high x 2m deep, debris flowed over base track to shoreline. Slope is steep and formed on old slip surface. Base track cut removed toe support	40	Rainfall	Avalon report no. 0534 B, 2005
022	Te Ara Tutanga Track (Base 12 Track)	18/05/2005	Landslide	Landslide above base track adjacent/similar to 11, 8m wide x 4m high x 1m deep	32	Rainfall	Avalon report no. 0534 B, 2005
023	Te Ara Tutanga Track (Base 13 Track)	18/05/2005	Landslide	Landslide above base track adjacent/similar to 12, tension crack 10m wide x 5m high, slipped 20mm then locked	50	Rainfall	Avalon report no. 0534 B, 2005
024	Te Ara Tutanga Track (Base 14 Track)	18/05/2005	Landslide	Landslide 15m above base track, 5m wide x 5m high x 3m deep, debris flowed over base track to shoreline, slope is steep, formed on old slip surface	75	Rainfall	Avalon report no. 0534 B, 2005
025	Te Ara Tutanga Track (Base 15 Track)	18/05/2005	Landslide	large landslide on paddock slope between 4WD track, base track west of the water tank, 70m wide x 100m downslope x 4m deep. West side appears to be a planar slide on pale ashy/clay layers. East side appears to be a deeper circular slip mechanism. Water flow >1l/s in base of 24 May, local cuts through shell middens, rear tension crack links 2 crest sides, the debris flow includes number of trees, debris swept over the base track and into a fan on the beach. failure and debris movement was very rapid.	28000	Rainfall	Avalon report no. 0534 B, 2005
026	Te Ara Motukauri (4WD 16 track)	18/05/2005	Landslide	minor cut landslide immediately above 4WD track. 4m wide x 2m high. Approx. 40m above base track	10	Rainfall	Avalon report no. 0534 B, 2005
027	Te Ara Tutanga Track (Base 17 Track)	18/05/2005	Landslide	12m wide x 20m downslope x to 4m deep. Landslide surface on the pale ashy/clay layer. Approx. 30m above base track, debris ran out over base track, west side cuts shell midden	960	Rainfall	Avalon report no. 0534 B, 2005
028	Te Ara Tutanga Track (Base 18 Track)	18/05/2005	Landslide	2 adjacent landslide, 5m wide x 10m downslope x 2m deep and 3m wide x 5m downslope x up to 1.5m deep. Approx. 40m above base track	100	Rainfall	Avalon report no. 0534 B, 2005
029	Te Ara Tutanga Track (Base 19 Track)	18/05/2005	Landslide	reactive landslide 6m wide x 2m deep. Approx. 50m above base track, debris swept onto base track	40	Rainfall	Avalon report no. 0534 B, 2005
030	Te Ara Tutanga Track (Base 20 Track)	18/05/2005	Landslide	shallow landslide in steep slope immediately over base track		Rainfall	Avalon report no. 0534 B, 2005
031	Te Ara Tutanga Track (Base 21 Track)	18/05/2005	Landslide	minor landslide in steep cut slope immediately over base track		Rainfall	Avalon report no. 0534 B, 2005
032	Te Ara Tutanga Track (Base 22 Track)	18/05/2005	Landslide	minor landslide in steep cut slope immediately over base track		Rainfall	Avalon report no. 0534 B, 2005
033	Te Ara Tutanga Track (Base 23 Track)	18/05/2005	Landslide	minor landslide in steep cut slope immediately over base track		Rainfall	Avalon report no. 0534 B, 2005
034	Te Ara Tutanga Track (Base 24 Track)	18/05/2005	Landslide	minor landslide in steep cut slope immediately over base track		Rainfall	Avalon report no. 0534 B, 2005
035	Te Ara Tutanga Track (Base 25 Track)	18/05/2005	Landslide	minor landslide in steep cut slope immediately over base track		Rainfall	Avalon report no. 0534 B, 2005
036	Te Ara Tutanga Track (Base 26 Track)	18/05/2005	Landslide	tension crack at very low level immediately over base track, 5m x wide x 2m high x 1m deep	10	Rainfall	Avalon report no. 0534 B, 2005
037	Te Ara Tutanga Track (Base 27 Track)	18/05/2005	Landslide	minor landslide in steep cut slope immediately over base track		Rainfall	Avalon report no. 0534 B, 2005
038	Te Ara Tutanga Track (Base 28 Track)	18/05/2005	Landslide	minor landslide in steep cut slope immediately over base track		Rainfall	Avalon report no. 0534 B, 2005
039	Te Ara Tutanga Track (Base 29 Track)	18/05/2005	Landslide	minor landslide in slope immediately over base track 5m wide x 2m high	50	Rainfall	Avalon report no. 0534 B, 2005
040	Te Ara Tutanga Track (Base 30 Track)	18/05/2005	Landslide	landslide 25m above base track, 5m wide x 5m high x 2m deep	50	Rainfall	Avalon report no. 0534 B, 2005
041	Te Ara Tutanga Track (Base 31 Track)	18/05/2005	Landslide	minor landslide in steep cut slope immediately over base track		Rainfall	Avalon report no. 0534 B, 2005
042	Te Ara Tutanga Track (Base 32 Track)	18/05/2005	Landslide	landslide in landslide over base track. 5m x 5m x 2m	50	Rainfall	Avalon report no. 0534 B, 2005
043	Te Ara Tutanga Track (Base 33 Track)	18/05/2005	Landslide	shallow surface landslide immediately above base track, above old stone RW. 10m x 5m	50	Rainfall	Avalon report no. 0534 B, 2005
044	Te Ara Tutanga Track (Base 34 Track)	18/05/2005	Landslide	reactivation of an existing landslide 15m wide x 20m downslope x 5m deep. Approx. 25m above basetrack. Overhang topsoil above v. steep headwall. Evidence of layering old colluvium. Debris swept onto base track. crest of slip is encroaching on access track	1500	Rainfall	Avalon report no. 0534 B, 2005
045	Te Ara Tutanga Track (Base 35 Track)	18/05/2005	Landslide	shallow surfaces landslide immediately above base track, 6m x 6m x 1m	40	Rainfall	Avalon report no. 0534 B, 2005
046	Te Ara Tutanga Track (Base 36 Track)	18/05/2005	Landslide	minor shallow surface landslide & tension cracks outside of gully above steps track		Rainfall	Avalon report no. 0534 B, 2005
047	Te Ara Tutanga Track (Base 37 Track)	18/05/2005	Landslide	Landslide in steep slope immediately above base track, 4m wide x 8m downslope x 3m deep. Slip of old colluvium from above pale less permeable/dense clayey surface	100	Rainfall	Avalon report no. 0534 B, 2005
048	Te Ara Waikorire 38	18/05/2005	Landslide	landslide in slope immediately, waikorere/oruahine track junction/lighthouse, 15m wide x 20m downslope x 2m deep, debris has mostly locked up after a few metres slip. Slip of old colluvium	600	Rainfall	Avalon report no. 0534 B, 2005
049	Te Ara Motukauri (4WD 39 track)	18/05/2005	Landslide	minor landslide in trackside cut slope immediately above upper 4wd track. 6m x 4m high	20	Rainfall	Avalon report no. 0534 B, 2005

Landslide stabilised with remedial works consisting of 50m2, soil nails and rockfall mesh, erosion control matting

050		Te Ara Motukauri (4WD track)	18/05/2005	Erosion	upper section of 4WD track (to hairpin) has deep rain scour channels, requiring filling and surface rocks to clear	Rainfall	Avalon report no. 0534 B, 2005	
051		Te Ara Motukauri (4WD track)	18/05/2005	Landslide	Landslide in trackside cut slope immediately above upper 4wd track, 6m wide x 4m high	20	Rainfall	Avalon report no. 0534 B, 2005
052		Te Ara Motukauri (4WD track)	18/05/2005	Landslide	minor landslide in trackside cut slope immediately above upper 4WD track		Rainfall	Avalon report no. 0534 B, 2005
053		Te Ara Motukauri (4WD track)	18/05/2005	Landslide	landslide in trackside cut slope immediately above upper 4wd track		Rainfall	Avalon report no. 0534 B, 2005
054		Te Ara Motukauri (4WD track)	18/05/2005	Landslide	landslide in trackside cut slope immediately above upper 4wd track, 6m wide x 4m high	20	Rainfall	Avalon report no. 0534 B, 2005
055		Te Ara Motukauri (4WD track)	18/05/2005	Landslide	Landslide in trackside cut slope immediately above upper 4WD track, 10m wide x 4m high	40	Rainfall	Avalon report no. 0534 B, 2005
056		Te Ara Motukauri (4WD track)	18/05/2005	Landslide	Landslide in trackside cut slope inside hairpin bend on 4WD track, 6m wide x 4m high. Further slippage could encroach on road	20	Rainfall	Avalon report no. 0534 B, 2005
057		Te Ara Motukauri (4WD track)	18/05/2005	Landslide	Landslide in trackside cut slope immediately above upper 4WD track, 4m wide x 3m high	10	Rainfall	Avalon report no. 0534 B, 2005
058		Te Ara Tutanga Track (Base Track)	18/05/2005	Landslide	Landslide onto base track 10m3	10	Rainfall	Avalon report no. 0534 B, 2005
059		Te Ara Tutanga Track (Base Track)	18/05/2005	Landslide	Landslide onto base track 10m3	10	Rainfall	Avalon report no. 0534 B, 2005
060		Te Ara Tutanga Track (Base Track)	18/05/2005	Landslide	Landslide onto base track 20m3	20	Rainfall	Avalon report no. 0534 B, 2005
061		Te Ara Tutanga Track (Base Track)	18/05/2005	Landslide	Landslide onto base track 2m3	2	Rainfall	Avalon report no. 0534 B, 2005
062		Te Ara Tutanga Track (Base Track)	18/05/2005	Landslide	Landslide onto base track 2m3	2	Rainfall	Avalon report no. 0534 B, 2005
063	zone 6 (slopes above campground)	TCC_Campground	22/06/2005	Rockfall	well rounded boulder (2 to 3 m dia) rolled 25m 30deg downslope down to campground boundary fence following heavy rainfall event. whilst rolling has dislodged a second 1.5m dia boulder	8	Rainfall	Avalon Report no. 0534A, 2005
064	(Zone 6, 6a-6w)	TCC_Campground	22/06/2005	Rockfall	hazard boulders across steep slopes above campground hazard 23 x boulders were identified as marginally stable		Combination seismic and Rainfall	Avalon Report no. 0534A, 2005
065	zone 6 (slopes above campground)	TCC_Campground	1/09/2005	Rockfall	TCC Mauao ranger reports a rock above the campground that slipped during rain and killed 2 sheltering lambs		Rainfall	Avalon Zone 6 scaling report, 5/9/05
066	Western oruahine track	Te Ara Oruahine Track	1/12/2005	Rockfall	TCC Mauao ranger - reports rockfall onto western Oruahine track caused by climbers.		Human Activity	Avalon email correspondance 15/12/2005
067	Zone 2 bluffs	Te Ara Waikorire	1/03/2006	Rockfall	TCC Mauao ranger spotted boulder at base of Zone 2 bluffs. Disc shaped approx. 1ton marginally stable, soil around boulder has eroded		Erosion	Avalon email correspondance 3/3/2006
068	unconfirmed	Te Ara Oruahine Track	1/07/2007	Rockfall	Avalon inspection identifies small rocks fallen onto track	1	Erosion	Avalon monitoring report - 26th July 2007
069	Zone 3e	Te Ara Tutanga Track (Base Track)	30/07/2007	Rockfall	TCC Mauao rangers recorded member of public near miss with rockfall crossing base track on north western side of Mauao.		Erosion	Avalon report , 17th August 2007
070	Zone 3e	Te Ara Oruahine Track	30/07/2007	Rockfall	Significant damage to Oruahine track. source of rockfall was found to be overhanging rock outcrop 150m vertical above base track, 40m above Oruahine track. rockfall guided down gully (3e)		Erosion	Avalon report , 17th August 2007
071	Limited available records for event		1/06/2011	combination landslide and rockfall	intense rainfall, triggered up to 80 landslides and few rockfall events causing track closure. Geotechnical remedial works carried out by others. Avalon were not involved in the response works except for some scaling works and have no records for this event.		Rainfall	Avalon monitoring report - 27th April 2012/ TCC powerpoints. Tonkin & Taylor records (unavailable)
072	exact location not specified	Te Ara Tutanga Track (Base Track)	1/09/2012	Landslide	landslide over base track reactivated resulting in debris flow over the track causing track closure		Rainfall	Avalon monitoring report - 25th october 2012
073	exact location not specified	Te Ara Oruahine Track	1/09/2012	Rockfall	Avalon inspection identified recent rockfall recorded on the northern Oruahine track		Erosion	Avalon monitoring report - 25th october 2012
074	exact location not specified	Te Ara Tutanga Track (Base Track)	15/05/2013	Landslide	Rainfall event caused landslide adjacent to base track immediately north of campground to reactivate with debris flow, closing the track.debris was removed		Rainfall	Avalon monitoring report - 10th June 2013
075		Te Ara Motukauri (4WD 7 track)	15/05/2013	Landslide	Landslide reactivated on southern slope after rainfall event		Rainfall	Avalon monitoring report - 10th June 2013
076	exact location not specified	Te Ara Rangihakaoma	15/05/2013	Rockfall	possible rockfall movements across sloping paddocks below the Waikorere track		Rainfall	Avalon monitoring report - 10th June 2013

Avalon not involved in June 2011 response, limited data on landslides. Tonkin & Taylor records (unavailable), limited data available by TCC, categorised as 1 event

077	exact location not specified	TCC_Campground	15/05/2013	Rockfall	rockfall boulder <300mm observed above southern campground	Rainfall	Avalon monitoring report - 10th June 2013	
078	exact location not specified	TCC_Campground	15/05/2013	Retaining Wall Damage	timber pole retaining walls behind highest cabin failing	Rainfall	Avalon monitoring report - 10th June 2013	
079	exact location not specified	TCC_Campground	15/05/2013	Retaining Wall Damage	concrete block retaining wall at northern end of campground, backfill movement at wall end	Rainfall	Avalon monitoring report - 10th June 2013	
080	exact location not specified	Te Ara Oruahine Track	1/06/2015	Rockfall	hole in soil on rockface indicating recent boulder release over Oruahine track	Rainfall	Avalon monitoring report - 17th June 2015	
081	exact location not specified	TCC_Campground	1/06/2015	Retaining Wall Damage	falling stone retaining wall observed for a 3m high cut slope at the southern area of the campground	Rainfall	Avalon monitoring report - 17th June 2015	
082	exact location not specified	Te Ara Oruahine Track	25/10/2016	Rockfall	member of the general public reported rockfall near miss to TCC ranger, end of Oruahine Track, 1 large rock that flew in front of me at head height (dinner plate size approx. 200mm)	Erosion	Avalon monitoring report for April 2017, 24th April 2017	
083	exact location not specified	Te Ara Oruahine Track	9/03/2017	Rockfall	member of the general public reported a rockfall near miss, rock approx. 900 x 700 x 500mm, came down at speed from the northern bluffs and crossed the Oruahine track at speed bouncing on the outside track edge before stopping approx. 30m below in vegetation - track was closed, track impacted with 0.5m x 0.5m x 0.5m deep - source location relatively small bluff high on slope,	0.3 Erosion	Avalon monitoring report for April 2017, 24th April 2017	1-1.5m3 of boulders were moved/marginally stable 0 these were scaled by avalon
084	exact location not specified	Te Ara Tutanga Track (Base Track)	3/04/2017	combination landslide and rockfall	250mm rainfall event following ex-tropical cyclone Debbie, minor landslides/rockfalls. 14m wide landslide resulted in 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 reopened in March 2020.	Rainfall	Avalon monitoring report for April 2017, 24th April 2017, WSP 2022 report	
085	exact location not specified	Te Ara Tutanga Track (Base Track)	6/11/2017	Landslide	Avalon inspection identified a landslide above the track above north-west base track.	Rainfall	Avalon Monitoring report for April 2018, 24th April 2018	
086	exact location not specified	Te Ara Oruahine Track	17/04/2018	Rockfall	Avalon inspection identified 1 x rockfall found on Oruahine track (location unconfirmed)	Erosion	Avalon Monitoring report for April 2018, 24th April 2018	
087	exact location not specified	Te Ara Waikorere	17/04/2018	Rockfall	Avalon inspection identified 1 x rockfall found on Waikorere track (location unconfirmed)	Erosion	Avalon Monitoring report for April 2018, 24th April 2018	
088	exact location not specified	Te Ara Waikorere	1/06/2018	Rockfall	member of general public reported a 250mm dia rock falling onto mid-waikorere track - source steep slope between track and rock bluffs, similar rocks resting on the surface were removed	Erosion	Avalon monitoring report for November 2018, 3rd December 2018, Avalon project #19145	
089	exact location not specified	Te Ara Oruahine Track	1/05/2019	Rockfall	Avalon inspection identified recent rockfall onto the Oruahine track, several rock fragments (<30mm)	Erosion	Avalon monitoring report for May 2019, 6th May 2019, Avalon project #20024	
090	annotated figure shows location	Te Ara Waikorere	2/08/2021	Rockfall	member of general public reported a rockfall event to rangers office, rockfall approx. 0.5m-0.8m long, thin (approx. 100kg). Impacted Waikorere track a few metres in front of the person. Person heard rockfall was rolling/bouncing down from above, exit the bush above the track, they safely moved away from the fall line sinkhole (1m3) on lower slope, above campground, piping between permeable colluvium and clayey volcanic ash . Inspected using a downhole camera, tunnel 0.5m diameter x 5m long	0.12 Erosion	Avalon monitoring report for August 2021, 30th August 2021, Avalon project #22102	
091	lower slope, above campground	TCC_Campground	1/03/2021	Sinkhole 'tomo'		1 piping	Avalon monitoring report for August 2021, 30th August 2021, Avalon project #22102	
092		Te Ara Tutanga Track (Base Track)	1/03/2021	combination landslide and rockfall	Avalon inspection identified rockfall blocks present from western base track existing slip face	Erosion	Avalon monitoring report for August 2021, 30th August 2021, Avalon project #22102	
093	slopes above campground	TCC_Campground	28/06/2022	Rockfall	member of general public reported a boulder movement, Avalon inspection identified no recent movement	Erosion	Avalon monitoring report for August 2022, 30th August 2022, Avalon project #23043	
094	Not applicable	Te Ara O Tutauaroa	2/05/2025	Rockfall	half way down goat track, start of bluff outcrop, HD Geo identified recent rockfall evidence 200mm x 300mm x 100mm, along edge of track	0.1 Erosion	HD Geo inspection on 02/05/2025	

095	Not applicable	Te Ara Motukauri (4WD track)	2/05/2025	Landslide	125m upslope from Motukauri track, reactivation of translational landslide identified using drone imagery. 20m wide x 65 m long x shallow approx. 1m deep, evidence of debris flow. Historical aerial imagery from 2012 shows landslide feature.	1300	Rainfall	HD Geo inspection on 02/05/2025	1879867.3, 5830051.61 / 80m
096	Not applicable	Te Ara Rangihakaoma	unknown	Landslide	Te Ara Rangihakaoma transects across historical landslide features identified in historical imagery. 40m wide x 110 m long x deep approx. 2-3m deep, evidence of debris flow. Historical aerial imagery from 1943 shows landslide feature.	13200		Historical features	1880164.02, 5830431.07 / 40m
097	Not applicable	Te Ara Rangihakaoma	unknown	Landslide	Te Ara Rangihakaoma transects across historical landslide features identified in historical imagery. 40m wide x 110 m long x deep approx. 2-3m deep, evidence of debris flow. Historical aerial imagery from 1943 shows landslide feature.	13200		Historical features	1880185.54, 5830522.50 / 40m
098	Goat track	Te Ara O Tutauaroa	1/08/2021	Landslide	10m above track translational landslide identified during site walkover. Estimate 15m wide x 40 m long x deep approx. 1-2m deep, reactivation of landslide debris with boulders present in debris. 1 x Boulder (1.5m dia) on slip edge, overhanging, possible risk of movement and rockfall onto track.	600	2 Rainfall	Avalon monitoring report for August 2021, 30th August 2021, Avalon project #22102 + HD Geo inspection on 02/05/2025	1879599.51, 5830557.77 / 95m
099	2009-1	Te Ara Tutanga Track (Base Track)	17/03/2009	Landslide	Reactivation of a previous landslide (ID060), 8m wide soil and debris fall, within a 6m high cut batter within thinly bedded tuff.	20	Rainfall	Terrane Consultants Ltd, 'Slips, Mauao Base Track', reference 3071, 19th March 2009	
100	2009-2	Te Ara Tutanga Track (Base Track)	17/03/2009	Landslide	slump on upslope cut batter, 6m wide, within colluvium soils, 3 x boulders exposed at the headscarp, groundwater seepage observed	30	Rainfall	Terrane Consultants Ltd, 'Slips, Mauao Base Track', reference 3071, 19th March 2010	
101	2009-3	Te Ara Tutanga Track (Base Track)	17/03/2009	Landslide	3m wide shallow translational soil and vegetation failure, within soft sands and silts, minor event	5	Rainfall	Terrane Consultants Ltd, 'Slips, Mauao Base Track', reference 3071, 19th March 2010	



APPENDIX E – RISK ASSESSMENT MATRIX



LIKELIHOOD – The possibility of the hazard occurring.						
	Definition	Definition	Annual probability (modified for roading infrastructure)	Example timeframes	Slope observations	Triggering event
1	Currently occurring	The hazard is currently occurring	26	Weeks	Noticeable movement is occurring within hours. Large tension cracks or joint defect apertures, heavy ground water seepage.	Normal conditions, minor rainfall or small earthquake/aftershock.
2	Almost Certain	The hazard will occur in the near future	12	Months	There are obvious signs of an active mechanism with signs of active movement and failure. Movement is not noticeable over a couple of weeks. Tension crack apertures are less than 50mm, ground water seepage is limited or absent.	Elevated ground water conditions, minor rainstorm events and earthquakes
3	Likely	The hazard could easily occur	1	< 1 year - 1	The mechanism is noticeable but doesn't show immediate signs of reactivation or failure. Tension crack and joint defects are tight. Groundwater seepage is not observed during normal conditions.	Common event - 1 year ARI rainfall event or minor earthquake
4	Possible	The hazard is known to happen	0.1	10 years - 0.1	Mechanism has occurred in the past. Mechanism could reactivate	10 year ARI
5	Unlikely	The hazard hasn't occurred in the past, but it is feasible to occur in the future.	0.01	100 years - 0.01	Subtle features that suggest a mechanism is present (geological features). Movement is possible.	large scale uncommon event - 100 year ARI

Table 6 - Likelihood definitions

Table 7 - Consequences definitions

CONSEQUENCES- The most likely consequence should the hazard occur.			
	Definition	Definition - risk to life (user)	Definition - risk to asset and economy
5	Catastrophic	Death	>\$1.0 million - Complete destruction of a significant asset. Years to repair with no temporary solution. The repair will be expensive and the impact on the economy will be great
4	Major	Fatality is possible. Serious harm likely.	\$500k to 1 million - Major damage to significant asset. The repair will be expensive and the impact on the economy will be great.
3	Medium	Hospitalisation and either short or long term disability	\$150k to 500k - Major damage to an asset. Temporary options may be available to keep the asset open and working for the short term.
2	Minor	Medical treatment or first aid or both	\$50k to 150k - Some damage to asset that required repairs. Function may not be tolerable long term.
1	Insignificant	Negligible - minor scrapes and bruising	< \$50k- Minor damage required some maintenance or repairs.

Likelihood		Approximate annual probability	Example timeframes	Consequence to property/asset/user				
				1: Catastrophic	2: Major	3: Medium	4: Minor	5: Insignificant
1	Currently occurring	2.6E+01	Weeks	VH	VH	VH	H	M
2	Almost certain	1.2E+01	Months	VH	VH	H	M	L
3	Likely	1.0E+00	< 1 year - 1	VH	H	H	M	L
4	Possible	1.0E-01	10 years - 0.1	H	H	M	L	VL
5	Unlikely	1.0E-02	100 years - 0.01	M	M	L	VL	VL
Note (1)	The risk assessment must clearly state whether it is for existing conditions or with risk control measures which may not be implemented at the current time.							

Table 8 - Risk matrix

RISK LEVEL IMPLICATIONS		
Risk level		Example Implications (7)
VH	Very High Risk	Unacceptable without treatment. Extensive detailed investigation and research, planning and implementation of treatment options essential to reduce risk to low; maybe to expensive and not practical. Work likely to cost more than value of the asset.
H	High Risk	Unacceptable without treatment. Detailed investigation, planning and implementation of treatment options required to reduce risk to low. Work would cost substantial sum in relation to the value of the asset.
M	Moderate Risk	May be tolerate in certain circumstances (subject to regulators approval) but requires investigation, planning and implementation of treatment options to reduce the risk to low. Treatment options to reduce to Low risk should be implemented as soon as practicable.
L	Low Risk	Usually acceptable to regulators. Where treatment has been required to reduce the risk to this level, ongoing maintenance is required.
VL	Very Low Risk	Acceptable. Manage by normal slope maintenance procedures.
Note: (7) The implications for a particular situation are to be determined by all parties to the risk assessment and may depend on the nature of the asset at risk; these are only given as a general guide.		

Table 9 - Risk level implication matrix. Actual acceptance levels need to be determined and/or agreed by the client.

9.3 Project Updates August 2025

File Number: A18499818

Author:

s.7(2)(f)(ii)

Authoriser:

PURPOSE OF THE REPORT

1. For Ngā Poutiriao ō Mauao to receive updates about progress of projects/activities with respect to the management and development of Mauao.

RECOMMENDATIONS

That Ngā Poutiriao ō Mauao:

- (a) Receives the report "Project Updates August 2025".
-

EXECUTIVE SUMMARY

2. This report provides Ngā Poutiriao ō Mauao (Ngā Poutiriao) with a concise update on the progress of projects and activities concerning the management and development of Mauao. In alignment with the Mauao Historic Reserves Management Plan 2018 and the directives of Te Mahere Whakamahinga o Mauao (Mauao Implementation Plan, 2021), a range of initiatives are underway to enhance the natural, cultural, and recreational values of Mauao.

BACKGROUND

3. A number of projects and activities are taking place with respect to management and development of Mauao, in accordance with the Mauao Historic Reserves Management Plan 2018, and Te Mahere Whakamahinga O Mauao (Mauao Implementation Plan), 2021 version. This report provides an update on projects and activities.

DISCUSSION

4. The following tables provide detail of the status of existing projects/activities, and next steps required to progress them.

Table 1.1 – Project Updates as at August 2025 – Mauao Implementation Plan (refer Attachment 1 for a copy of Mauao Implementation Plan for further details)		
Project/activity description in Mauao Implementation Plan	Update/Discussion	Next steps
F1 – Undertake Archaeological Research to inform development of interpretation, restoration and planting plan.	In progress: - The Mauao Trust, at a workshop in September 2021, indicated support to the draft strategy, but requested a matauranga Maori review of the draft strategy, before it was formally adopted. This is underway and anticipated to be completed in the very short term. - In the meantime, some geophysical and survey investigations have been undertaken. - Upon review of the draft strategy, Mauao Trust and Ngā Poutiriao will need to approve it, to enable the actual research to be undertaken. - At its 12 June 2025 hui, Ngā Poutiriao hui resolved that the Chair of Ngā Poutiriao is able to approve the final plan, subject to prior approval by Mauao Trust, to progress this project. - Upon approval of the research strategy, staff will proceed with implementing the research strategy, using currently available budgets. - There is budget available in the Mauao Development budget, to commence implementation of the strategy this year, and the following two years. There is existing budget to complete the review of the strategy, and to commence its implementation. Options to acquire any unbudgeted funding for implementation include TCC and alternative funding, and will be subject to normal funding decision making processes.	Complete matauranga Maori review of the draft research strategy. Mauao Trust and Ngā Poutiriao Chair approve final strategy. Upon approval, staff commence implementation using available budgets.
F2 – Design and deliver Placemaking and Interpretation	Substantially complete: Installation of 2021 approved placemaking and interpretation elements	Complete last CCTV camera install.

Table 1.1 – Project Updates as at August 2025 – Mauao Implementation Plan (refer Attachment 1 for a copy of Mauao Implementation Plan for further details)

Project/activity description in Mauao Implementation Plan	Update/Discussion	Next steps
elements.	completed in June 2024. • Installation of additional seating, fencing and signage, per direction by Ngā Poutiriao in October 2024, scheduled for completion by end of July 2025. • Installation of CCTV, per Mauao Trust request and funding re-allocation approved by Ngā Poutiriao on 12 June 2025: ○ 3 of 4 installed ○ Final one in progress	
F3 – Prepare and implement Korowai Restoration and Planting Plan.	Substantially complete: • A restoration and planting plan has been prepared and is being implemented annually through an operational budget. • Upon completion of archaeological research directed by the Archaeological Research Strategy, is it anticipated that additional areas of Mauao will be identified as suitable for planting to restore the Korowai o Mauao. At that time, staff will review the restoration and planting plan, seek approval from Mauao Trust and Ngā Poutiriao to any amendments, and commence implementation of the reviewed plan. There is existing budget available to continue the to undertake planting to restore the Korowai o Mauao.	Review available planting areas based on findings of archaeological research (item F1 above). Seek approval from Mauao Trust and Ngā Poutiriao to amended restoration and planting plan. Implement amended restoration and planting plan with available budgets.
F4 – Implement hang gliding guidelines. Ngā Poutiriao annually receive BOP Hang Gliding and Paragliding Club report, consider review of hang gliding and paragliding operating rules, and consider annual permission for vehicle access	Due now: • The current (2022) rules for hang gliding and paragliding operations on Mauao require BOP Hang Gliding and Paragliding Club (the Club) – refer Attachment 4 – to report annually to Ngā Poutiriao. The report must, as a minimum, summarise the previous year’s activities, report on health and safety issues and incidents, and include a review of the operating rules. • Ngā Poutiriao is able to provide feedback to the Club throughout each year, about any complaints about the activity, and the Club is required to respond	Defer decision until after decisions about Mauao resting and events management. Receive annual report from the Club in the meantime

Table 1.1 – Project Updates as at August 2025 – Mauao Implementation Plan (refer Attachment 1 for a copy of Mauao Implementation Plan for further details)		
Project/activity description in Mauao Implementation Plan	Update/Discussion	Next steps
on Mauao.	and include feedback in their annual report and review of the rules. • It is understood that Mauao Trust has concerns about health and safety incidents on Mauao associated with the activity. • In addition, permission is required annually from Ngā Poutiriao to drive vehicles to the summit – Refer Attachment 5. • Reporting and request are now overdue. • There is strong relation to Project F8 Mauao Resting, and the project to develop decision making framework for activities/events on Mauao discussed at Table 1.2 below. • Mauao Trust have asked that decisions on hang gliding and paragliding be deferred until decisions on options to provide for resting and events have been made, to ensure a consistent approach to decision making is applied. No specific budget is allocated, as this activity is undertaken by staff within their roles.	
F5 – establish and implement rock climbing guidelines for Mauao	complete	n/a
F6 – plan of works for Peace Monument	complete	n/a
F7 – investigate establishment of year-round fire ban on Mauao	complete	n/a
F8 – Mauao Resting period establishment. Investigate options to rest Mauao through restricting public access to the maunga,	In progress: • Discussions around resting options for Mauao have been ongoing for a number of years. • It is understood that Mauao Trust are in the process of discussing preferred	Mauao Trust will provide direction to Ngā Poutiriao on preferred resting period(s).

Table 1.1 – Project Updates as at August 2025 – Mauao Implementation Plan (refer Attachment 1 for a copy of Mauao Implementation Plan for further details)		
Project/activity description in Mauao Implementation Plan	Update/Discussion	Next steps
whilst not unduly restricting recreational opportunities to the Reserve.	resting period(s) for Mauao. Mauao Trust will provide direction to Ngā Poutiriao on preferred resting period(s). As this is an “investigate” project, there is no specific budget, as it comprises staff time only. Costs for implementation of resting will be identified through the investigation, and funding sources will be considered at that time.	
F9 – establish and implement rock stability monitoring programme	Complete	n/a
F10 – Prepare and implement Fatality Management Procedure Development.	In progress: - A scoping document which will be used to prepare a Fatality Management Procedure has been prepared by staff, and is currently with Mauao Trust for review and feedback. - Upon review by Mauao Trust, a Fatality Management Plan will be amended by staff, and brought to Ngā Poutiriao for adoption. - It will then be shared with all stakeholders and implemented accordingly. No specific budget is allocated, as this project is undertaken by staff within their existing roles.	Mauao Trust provide their feedback to the draft plan. Prepare amended plan based on Mauao Trust feedback, and present to Ngā Poutiriao for adoption November 2025 meeting. Implement adopted plan.
F11 - Kaitiaki Programme Development. Investigate a kaitiaki programme, co-designed by Mauao Trust and Ngā Poutiriao	In progress: - Discussions around the development of a Kaitiaki Programme for Mauao have been ongoing for a number of years. - The Mauao Trust has been leading the design of a programme. - It is now considered timely for Ngā Poutiriao to work with Mauao Trust to support implementation of the proposed programme.	Ngā Poutiriao confirm with Mauao Trust as to how it can support Mauao Trust to implement the preferred programme e.g. Mauao Operations Group resource. Report back to Ngā Poutiriao with an update by the end of 2025

Table 1.1 – Project Updates as at August 2025 – Mauao Implementation Plan (refer Attachment 1 for a copy of Mauao Implementation Plan for further details)		
Project/activity description in Mauao Implementation Plan	Update/Discussion	Next steps
	This could include Ngā Poutiriao providing resource from the Mauao Operations Group to assist Mauao Trust to investigate how best to implement the proposed programme, including identifying costs and potential funding sources/opportunities. There is staff time available through the Mauao Operations Group to assist Mauao Trust to investigate the design of a proposed programme. There is currently no TCC budget to support implementation.	calendar year.
F12 – Sponsorship Framework Development to access new sources of funding for Mauao projects.	In progress: - This project has not been progressed since some earlier conversations. - This project is important to progress, as it has the potential to make funds available for projects on Mauao. - Requires a review of previous discussions and work undertaken to date, and a report back to the Ngā Poutiriao by the end of 2025 calendar year, with recommended next steps. No specific budget is allocated, as this project is undertaken by staff within their existing roles.	Report back to Ngā Poutiriao by the end of 2025 calendar year, with recommended next steps to progress this project.
S1 - Establish and implement concessionaire standards for commercial activities on Mauao.	In progress: - This project has not been progressed since some earlier conversations. - This project is important to progress in the current financial environment, as it has the potential to make funds available for the management of Mauao. - It is also directly related to events approvals on Mauao – which is a separate project discussed at Table 1.2 below. - Requires a review of previous discussions and work undertaken to date, and a report back to the Ngā Poutiriao by the end of 2025 calendar year, with recommended next steps.	Report back to Ngā Poutiriao by the end of 2025 calendar year, with recommended next steps to progress this project.

Table 1.1 – Project Updates as at August 2025 – Mauao Implementation Plan (refer Attachment 1 for a copy of Mauao Implementation Plan for further details)		
Project/activity description in Mauao Implementation Plan	Update/Discussion	Next steps
	No specific budget is allocated, as this project is intended to be undertaken by staff within their existing roles.	
S2 - Establish and implement pest control plan.	Substantially complete: - Establishment has been completed, and implementation is ongoing. - The plan needs to be documented and brought back to Ngā Poutiriao for adoption. There is budget available to engage a pest control specialist, if required, to support the preparation of a final plan. Implementation is funded through existing operational budgets.	Document the pest control plan and bring to Ngā Poutiriao for adoption by June 2026.
S3 - Walkway and Seating Plan Review existing walkways and seating and prepare and implement a plan, having regard to archaeological, cultural and ecological values.	In progress: - A seating plan has been prepared and implemented through the delivery of the placemaking and interpretation project – complete. - A walkway plan has not yet been prepared. - The findings of the Archaeological Research Project (refer F1 above), will help inform the walkway plan. - Whilst no formalised plan for walkways has been prepared, day-to-day management of walkway use is ongoing. - Implementation of the walkway plan will occur subject to available funding. There is budget available if required for design and consultancy expenses to assist with plan development e.g. archaeological input.	Report back to Ngā Poutiriao by June 2026, with recommended next steps.
S4 - Ministry of Fisheries info on kaimoana limits. Work with ministry to review signage on Mauao that sets out information on kaimoana	Not commenced: With the imminent completion of placemaking and interpretation on Mauao, it is considered appropriate timing to engage with MoF about the current signs located on and in the immediate vicinity of Mauao, to investigate opportunities to integrate them into the environment.	Engage with Ministry of Fisheries about kaimoana signage. Report back to Ngā Poutiriao by end of 2025 calendar year.

Table 1.1 – Project Updates as at August 2025 – Mauao Implementation Plan (refer Attachment 1 for a copy of Mauao Implementation Plan for further details)		
Project/activity description in Mauao Implementation Plan	Update/Discussion	Next steps
limits.	No specific budget is allocated, as this project is intended to be undertaken by staff within their existing roles.	
S7 – Investigate options for, and implement, Mauao Digital Storytelling.	In progress: - At the October 2024 Ngā Poutiriao hui, it was noted that there was a desire to upgrade the digital cultural storytelling on Mauao. - Digital cultural storytelling has been available using the Arataki Cultural Trails App. Technical support for the app from its developers is being reduced e.g. it been removed from the App Store and Google Play, though it is still available via a website platform. - The Takawaenga Maori Unit are working on the details of a proposal, and will report back at a later date. There is some existing budget next year and the following year for research and development of digital storytelling.	Takawaenga Maori Unit will report back to Ngā Poutiriao in due course.
S5 - Waka Launching site option. Investigate and implement, subject to feasibility.	No work has been undertaken on these projects to date. It is not proposed to undertake any work on them in the short term.	No work planned in the short term. Review timing and scope at time of proposed Mauao Implementation Plan review – refer separate report.
S6 - Cultural centre/visitor centre investigation. Investigate options to establish visitor centre and/or cultural centre at base of Mauao.		
T2 - Stone jetty repair programme. Establish repair programme for stone steps.		

Table 1.1 – Project Updates as at August 2025 – Mauao Implementation Plan (refer Attachment 1 for a copy of Mauao Implementation Plan for further details)

Project/activity description in Mauao Implementation Plan	Update/Discussion	Next steps
T1 – undertake archaeological research of stone steps	complete	n/a

Table 1.2 – Project Updates August 2025 – Other

Project/Activity Description	Update/Discussion	Next steps
Develop and implement a “decision making process” for the use of Mauao, including for events.	In progress: ○ Mauao Trust wishes Ngā Poutiriao to review and update the decision-making framework for decisions about the use of Mauao, including for events. ○ In 2022, the Venue and Events Facilitation Team approached Ngā Poutiriao requesting direction on events use of Mauao, with the aim to develop an events decision-making process for Mauao. ○ At the October 2024 Ngā Poutiriao hui, the need for a clear decision-making framework was raised again, during discussions about a proposed event on Mauao. ○ Mauao Trust has advised their aspiration to reduce the number active/sports events and increase the number of passive events, the aim being that passive events become the majority. ○ Management of event use of Mauao is closely related to Project F8 – Mauao Resting Period Establishment, and therefore further discussion about events management will be undertaken at the time that further discussions about resting take place: ○ It is understood that Mauao Trust (are in the process of discussing) preferred resting period(s) for Mauao. ○ Mauao Trust will provide direction to Ngā Poutiriao on preferred resting period(s).	Combine this discussion with future discussions about resting. Mauao Trust will provide direction to Ngā Poutiriao on preferred resting period(s) – refer project F8 above.

FINANCIAL CONSIDERATIONS

5. Nil

NEXT STEPS

6. Next steps are identified at Tables 1.1 and 1.2.

ATTACHMENTS

1. **Te Mahere Whakamahinga o Mauao - Mauao Implementation Plan 2018 v 2 Dec 2020
FINAL PDF New Branding Version - A17919921** [↓](#) 

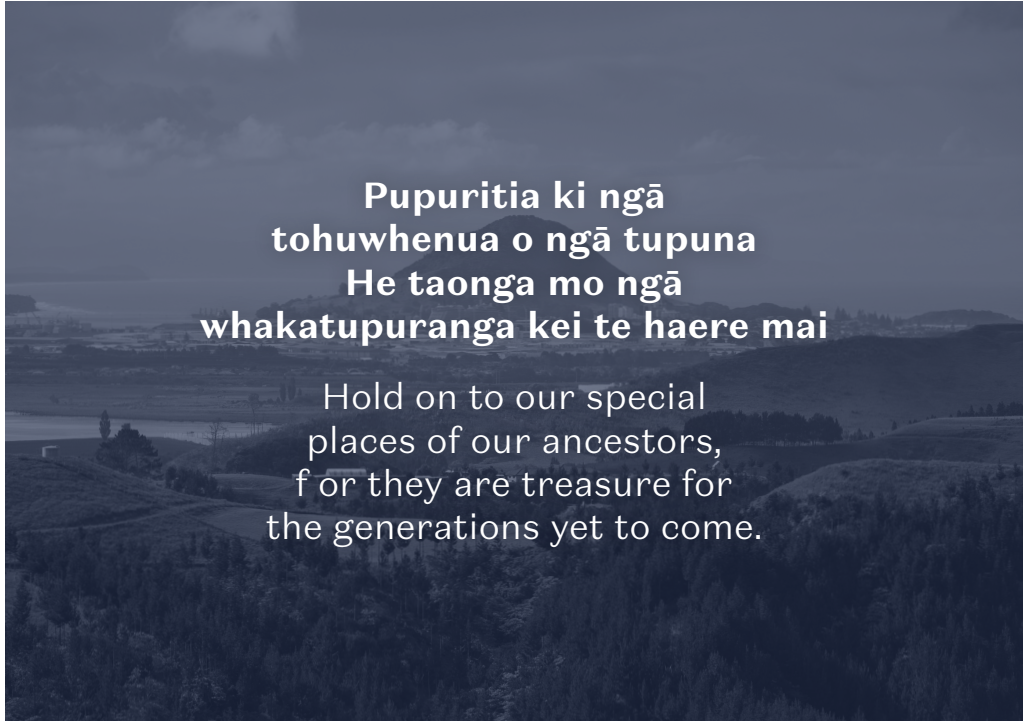




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**Pupuritia ki ngā
tohuwhenua o ngā tupuna
He taonga mo ngā
whakatupuranga kei te haere mai**

Hold on to our special
places of our ancestors,
for they are treasure for
the generations yet to come.

Tēnā koutou

This plan is the first implementation plan for Mauao. It sets out what we will do to preserve the mauri of Mauao, when we will do it, and how much we think it will cost. The plan will be updated each year to include any changes.

Mauao is a taonga of exceptional value representing the endurance, strength, and identity of local iwi. Mauao is central to the settlement of the three iwi of Tauranga Moana and the iwi Waitaha, with significant events occurring on or around the maunga. These events mark the tribal history of the iwi and connect the iwi to Tauranga Moana.

Mauao is also an important to the local community. It provides a natural landscape and recreational opportunities for those that live in, or visit the city. The management of Mauao must recognise its significance to the local community and tourism industry.

This plan considers how we can preserve our people's connection to the land, and the lands connection to the people. It employs traditional knowledge alongside modern approaches that recognise people are intrinsically linked to the environment, and that all parts of the environment are interconnected. The plan provides a holistic and integrated approach to the management of Mauao.

A partnership and shared vision

**Te whai te ara o te Kotahitanga e
taea ai e te katoa te tuku koha mai**

Pursuing unity of purpose and
direction where all are able
and encouraged to contribute

Together, the Mauao Trust and Tauranga City Council have partnered to deliver The Implementation Plan 2018 - 2028. The Mauao Trust are the owners of Mauao. Tauranga City Council work alongside the Mauao Trust to jointly manage the reserve for everyone to enjoy. The Implementation Plan 2018 - 2028 reflects a shared vision for Mauao.





What is an Implementation Plan?

The implementation plan is a holistic and adaptive tool for the management of Mauao. It is founded on the principle of integrated management. This recognises the environment as complex, interconnected, and continually changing. The implementation plan prioritises what will be done on Mauao. It provides direction to the timing, and costing of projects that are consistent with the vision to protect, conserve and enhance Mauao as a taonga of exceptional significance.

Why Have an Implementation Plan?

The implementation plan provides for:

Holistic and integrated management

Everything is considered at the beginning. All projects are considered against the relevant strategic direction and thought of as connected. Projects that are strongly linked are identified and the best way of delivering these determined.

Forward financial planning

Enables projects to be considered in the long term plan and annual plan.

Reduced complexities and inefficiencies

The planning and forethought that goes into the implementation plan reduces complexities and inefficiencies in project delivery by identifying projects that can be delivered together; the order of delivery, anticipated costs, and lead and supporting organisations.

Clear direction on project delivery

The plan clearly identifies projects, when they should be delivered, how much they will cost, and who should be involved.

Change and adaptability

The implementation plan is a living document that will be reviewed annually to provide for changing priorities and new information.

Better end outcomes

By planning ahead, we plan for success. The implementation plan will help us succeed in a shared vision for Mauao.

Kaitiakitanga

Te tino haepapa kia tiakina te oranga mana motuhake o Mauao mō ngā uri whakatupu.

The obligation to care for and protect the health and wellbeing of Mauao for future generations.



How Does the Implementation Plan Fit with Other Key Documents?

This implementation plan takes into account the unique joint management structure for Mauao. Mauao is owned by the three iwi of Tauranga Moana; Ngāi Te Rangi, Ngāti Pūkenga and Ngāti Ranginui. The Mauao Trust and Tauranga City Council jointly manage Mauao through the establishment of a joint board, known as Ngā Poutiriao ō Mauao. The iwi Waitaha also have a representative on Ngā Poutiriao ō Mauao in recognition of their historical connection to the maunga.

The Mauao Trust and Tauranga City Council determined that an implementation plan would assist in achieving the joint vision for Mauao. There is no legislative requirement to develop an implementation plan for Mauao. The decision to make an implementation plan for Mauao is connected to other agreements and plans. The implementation plan is a living document that will be reviewed annually to provide for changing priorities and new information.



Manaakitanga

**Kia whakatītinatia
ngā whanonga, ngā
mahi hei hāpai i te
mana o ētahi atu, arā
te atawhai, te aronui,
te tākoha atu te tākoha
atu te tākoha mai.**

Encouraging behaviour
and activities that
are mana enhancing
toward others including
generosity, care, respect
and reciprocity.

The Mauao Historic Reserve Vesting Act 2008

The Mauao Historic Reserve Vesting Act 2008, transfers ownership of Mauao from the Crown to the Mauao Trust. This act also recognises that Waitaha have an ancestral connection to Mauao. Under the Mauao Historic Reserve Vesting Act 2008, management of the reserve remained the responsibility of Tauranga City Council as the administering body under the Reserves Act 1977. The Tauranga Moana Collective Redress and Ngā Hapū o Ngāti Ranginui Claims Settlement Bill will replace council as the administering body of Mauao with a joint management board.

Memorandum of Understanding

The Mauao Trust and Tauranga City Council entered into a Memorandum of Understanding in 2013. The Memorandum of Understanding provides the framework for the joint administration of Mauao and delegates the management functions of Mauao to Ngā Poutiriao ō Mauao. The principles, purpose, functions and structure of Ngā Poutiriao ō Mauao are set out in the Memorandum of Understanding. One of the functions of Ngā Poutiriao ō Mauao under the Memorandum of Understanding is to prepare an Implementation Plan for Mauao.

Mauao Historic Reserve Management Plan

The Mauao Historic Reserve Management Plan is a statutory document prepared under the Reserves Act 1977. It was developed by Ngā Poutiriao ō Mauao and adopted by Tauranga City Council on 17 April 2018. It was developed by Ngā Poutiriao ō Mauao, agreed by the Mauao Trust in February 2018. The Historic Reserve Management Plan identifies an overall vision, objectives, management statements and actions for Mauao.

Moemoeā — Vision

That Mauao is protected, conserved, and appropriately enhanced as a taonga of exceptional cultural, spiritual, historic, and natural significance whilst providing for managed public access and use.

Whāinga - Objectives

To protect the historical, archaeological and cultural values, and meet the cultural needs and aspirations of tangata whenua. To protect and enhance the natural landscape character and ecological values of the reserve. To continue to meet the appropriate recreational and amenity needs of residents and visitors to the City.

Tikanga whakahaere - Management statements

Statements that guide the management of the reserve to achieve the vision and objectives. Provide direction on the management of the reserve, permitted and prohibited activities, and how decisions will be made for activities not anticipated by the Reserve Management Plan.

Ohomauri - Actions

Doing statements that set out tasks to give effect to the vision, objectives and management statements.

The Historic Reserve Management Plan cannot be quickly or easily changed. To front foot anticipated inefficiencies, the Historic Reserve Management Plan does not include project specific detail that would require regular review.

The implementation plan builds on the Historic Reserve Management Plan to identify, and set out the required detail for actions and projects that are identified in, or consistent with the management direction in the Historic Reserve Management Plan. It can be easily amended, providing the flexibility required to change priorities and align budgets with council's long term plan and annual plan, as necessary.

Long Term Plan

The long term plan is Tauranga City Council's forward planning document. It sets out Council's direction for the next 10 years, including what projects will be undertaken and how they will be funded. The Mauao Implementation Plan feeds into the long term plan, informing the allocation of council funding for the implementation plan projects. The long term plan is reviewed every three years, which allows for priorities and budgets to be adjusted.

Annual Plan

Council develops an annual plan in the two years between adopting the long term plan. The annual plan is an update to what was agreed through the long term plan. It highlights changes to council's budgets and work plans for each year. Any significant or material changes are consulted on with the community. The Mauao Implementation Plan is linked to the annual plan through a similar review process and any changes to the implementation plan will inform the annual plan. This process makes sure that our budgets and work plans are flexible enough to respond to changing priorities.



The Implementation Plan in Detail

Pursuing unity of purpose and direction where all are able and encouraged to contribute.

Te whakaarotau Priorities

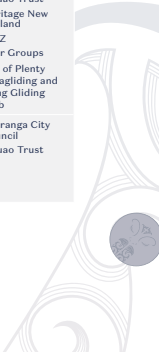
	Primary project	Sub actions	Rough order cost	Funding source	Timing	Lead organisation	Support organisations
Ref.	What will be done?	What are the key steps to achieving the action/project?	What is the cost estimate of completing this project/ action?	Where will the funds come from to complete this project/ action?	When will the project/ action commence?	Who will lead the delivery of the project/ action?	Who will support the delivery of the project/ action?
F1	Undertake archaeological research	Undertake archaeological research into the occupational and gardening areas, settlement patterns and lifestyle of the ancestors who resided at Mauao to inform the development of an interpretation plan, and restoration and signage plan.	\$150,000	MOU project fund	2020/2021 - 2025/2026	Ngā Pouitiria o Mauao	Tauranga City Council Mauao Trust Heritage New Zealand



Ref.	Primary project	Sub actions	Rough order cost	Funding source	Timing	Lead organisation	Support organisations
F2	Placemaking and Interpretation Plan	Develop an overall interpretation plan for Mauao that: - Investigates options to establish cultural gateways to Mauao, including the location, design and development of cultural gateways that reflect the cultural and historical significance of Mauao to tangata whenua; - Investigates options to replace the trig station on the summit of Mauao with appropriate pouwhenua; - Investigates options to establish an ātea on the summit of Mauao; - Investigate options to establish a design identity for Mauao; - Investigates options to establish cultural and historical information within the reserve, including the installation of interpretive signage where appropriate; - Investigates options to establish signage that identifies and provides information on specific features/areas of Mauao that are of significance to the three iwi of Tauranga Moana and the iwi Waitaha; - Considers the potential outcomes of future investigations into a waka launching site and cultural centre; - Identifies appropriate locations and the information required on entry signage that communicates permitted and restricted activities on Mauao; - Identifies appropriate locations and the information required on signage that directs visitors to reserve features and promotes the safe use of the reserve; - Identifies appropriate areas on Mauao to erect signage relating to wildlife protection;	\$80,000	MOU project fund	2018/2019 - 2020/2021	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust Heritage New Zealand LINZ User Groups Bay of Plenty Paragliding and Hang Gliding Club

Ref.	Primary project	Sub actions	Rough order cost	Funding source	Timing	Lead organisation	Support organisations
		- Identifies appropriate locations to erect signage advising the public and hang gliders/paragliders of the take-off and landing site for gliders/paragliders on Mauao; - Considers the archaeological, cultural, ecological values of Mauao; - Reflects the vision and goals of the Mauao Historic Reserve Management Plan; - Aligns with council's interpretation signage policy.					
		In partnership with iwi, prepare developed and detailed designs, and obtain consent for all necessary components identified in the Interpretation Plan.	Design cost included in first sub action. Consent to be confirmed upon completion of overall Interpretation Plan.	MOU project fund	2020/2021 - 2025/2026	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust Heritage New Zealand LINZ User Groups Bay of Plenty Paragliding and Hang Gliding Club
		Progressively implement Interpretation in accordance with the interpretation plan, developed designs and detailed designs, as resources permit.	\$1,200,000 To be confirmed upon completion of overall Interpretation Plan	MOU project fund	2020/2021 - 2024/2025	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust

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Ref.	Primary project	Sub actions	Rough order cost	Funding source	Timing	Lead organisation	Support organisations
Ref.	What will be done?	What are the key steps to achieving the action/project?	What is the cost estimate of completing this project/ action?	Where will the funds come from to complete this project/ action?	When will the project/ action commence?	Who will lead the delivery of the project/ action?	Who will support the delivery of the project/ action?
F3	Korowai: Restoration and Planting Plan	Develop an overall restoration and planting plan for Mauao that: - Identifies the most appropriate option for maintaining the grassed areas of the reserve and the integrity of the archaeological features present, including but not limited to: - Areas that should be retired from sheep grazing - Areas where sheep grazing is appropriate - Areas where planting can occur to contribute to the restoration of the cloak of Mauao; - Identifies trees and vegetation planted on archaeological features that pose a risk of damage to the archaeological feature; - Identifies areas where planting of indigenous vegetation can help protect and/or enhance wahi tapu sites, by either restricting public access or increasing public awareness of wahi tapu sites on Mauao; - Identifies areas where planting of indigenous vegetation will improve the water quality of those natural springs on Mauao; - Identifies areas where planting of indigenous vegetation will enhance the habitat value of existing vegetation; - Identifies vegetation for removal where this creates a fire hazard; - Identifies the historical area of Karaka to be restored in accordance with the cultural assessment prepared by Soffa Miskell, 2014; - Includes a map of the areas to which the cloak of Mauao relates.	Staff time only	MOU operational fund	2020/2021	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust Heritage New Zealand

Ref.	Primary project	Sub actions	Rough order cost	Funding source	Timing	Lead organisation	Support organisations
Ref.	What will be done?	What are the key steps to achieving the action/project?	What is the cost estimate of completing this project/ action?	Where will the funds come from to complete this project/ action?	When will the project/ action commence?	Who will lead the delivery of the project/ action?	Who will support the delivery of the project/ action?
		Progressively implement the restoration and planting plan as resources permit	\$1,400,000 Per annum amount to be confirmed upon completion of the restoration and planting plan.	MOU project / operational fund	2021/2022 – 2024/2025	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust
		Initiate and support projects to restore the cloak of mauao that involve Tauranga Moana iwi.	Staff time only	MOU operational fund	2019/2020 – 2024/2025	Ngā Poutiriao ō Mauao	Ngā Poutiriao ō Mauao Tauranga City Council Mauao Trust
F6	Restoration Plan of Works for the Peace Monument	Establish a restoration plan for the peace monument located at the summit of Mauao	NA	NA	2020/2021	Rotary Club of Tauranga	Ngā Poutiriao ō Mauao Tauranga City Council Mauao Trust
		Implement the restoration plan for the peace monument located at the summit of Mauao.	NA	NA	2020/2021	Rotary Club of Tauranga	Ngā Poutiriao ō Mauao Tauranga City Council Mauao Trust

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Ref.	Primary project	Sub actions	Rough order cost	Funding source	Timing	Lead organisation	Support organisations
	What will be done?	What are the key steps to achieving the action/project?	What is the cost estimate of completing this project/ action?	Where will the funds come from to complete this project/ action?	When will the project/ action commence?	Who will lead the delivery of the project/ action?	Who will support the delivery of the project/ action?
F8	Mauao Resting Period Establishment	Investigate options to rest Mauao through restricting public access to the maunga, whilst not unduly restricting recreational opportunities to the Reserve.	Staff time only	MOU project fund	2020/2021	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust
F10	Fatality Management Procedure Development	Investigate options to establish a procedure for managing fatalities that occur on Mauao.	Staff time only	MOU operational fund	2020/2021	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust
		Implement a fatality management procedure for managing fatalities that occur on Mauao.	Staff time only	MOU operational fund	2020/2021	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust
F11	Kaitiaki Programme Development	Investigate a kaitiaki programme to be co-designed between Mauao Trust and Ngā Poutiriao ō Mauao.	To be determined	To be determined	2020/2021	Mauao Trust Ngā Poutiriao ō Mauao	Tauranga City Council
F12	Sponsorship Framework Development	Establish a sponsorship framework to access new sources of funding for Mauao projects.	\$25,000		2021/2022	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust

Ref.	Primary project	Sub actions	Rough order cost	Funding source	Timing	Lead organisation	Support organisations
	What will be done?	What are the key steps to achieving the action/project?	What is the cost estimate of completing this project/ action?	Where will the funds come from to complete this project/ action?	When will the project/ action commence?	Who will lead the delivery of the project/ action?	Who will support the delivery of the project/ action?
S1	Concessionaire Standards Development	Establish concessionaire standards for commercial activities on Mauao that enhance visitor experiences and include a strong cultural component.	Staff time only	MOU operational fund	2021/2022	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust
		Implement the concessionaire standards.	Staff time only	MOU operational fund	2021/2022	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust
S2	Pest Control Plan	With consideration to established pest control methods, review animal pest control and create a plan for Mauao that considers the different methods including baiting, trapping, a pest proof fence, and/or other relevant mechanisms.	\$6,000	MOU project fund	2021/2022	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust
		Implement an animal pest control plan for Mauao.	\$15,000 per annum, to be confirmed upon completion of the plan	MOU operational fund	2021/2022	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust
S3	Walkway and Seating Review	Review the existing walkways and seating on Mauao, having regard to archaeological, cultural and ecological values. Consider where walkways or seating is needed, or should be removed from Mauao, and develop a walkway and seating plan that reflects all required changes.	Staff time only	MOU operational fund	2022/2023	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust
		Implement the walkway and seating plan.	\$40,000. To be confirmed upon completion of the walkway and seating plan	MOU operational fund	2023/2024	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust Heritage New Zealand

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Ref.	Primary project	Sub actions	Rough order cost	Funding source	Timing	Lead organisation	Support organisations
		What are the key steps to achieving the action/project?	What is the cost estimate of completing this project/ action?	Where will the funds come from to complete this project/ action?	When will the project/ action commence?	Who will lead the delivery of the project/ action?	Who will support the delivery of the project/ action?
S4	Ministry of Fisheries information on kaimoana limits	Work with the Ministry of Fisheries to review the signage on Mauao that sets out information on kaimoana limits.	Staff time only	MOU operational fund	2023/2024	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust Ministry of Fisheries
		Work with the Ministry of Fisheries to upgrade the signage on Mauao that sets out information on kaimoana limits, as determined necessary.	Staff time only	MOU operational fund	2023/2024	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust Ministry of Fisheries
S5	Waka Launching Site Options	Investigate options to establish a waka launching site at the base of Mauao (further actions/projects dependent on the outcome of investigations)	\$40,000	MOU project fund	2021/2022	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust
		Further actions/projects dependent on the outcome of investigations. Implement waka launching site if determined feasible.	\$100,000 To be determined following first sub action	MOU project fund	2023/2024	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust
S6	Cultural Centre / Visitor Centre Investigation	Investigate options to establish a visitor centre and/or cultural centre at the base of Mauao (further actions/projects dependent on the outcome of investigations).	\$10,000	MOU project fund	2021/2022	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust
S7	Mauao Digital Storytelling	Investigate and implement digital storytelling options, such as using current beacons and leverage Arataki app, and building of a dedicated Mauao website.	\$130,000	MOU project fund	2022/2023	Ngā Poutiriao ō Mauao	Tauranga City Council

Ref.	Primary project	Sub actions	Rough order cost	Funding source	Timing	Lead organisation	Support organisations
		What are the key steps to achieving the action/project?	What is the cost estimate of completing this project/ action?	Where will the funds come from to complete this project/ action?	When will the project/ action commence?	Who will lead the delivery of the project/ action?	Who will support the delivery of the project/ action?
T1	Stone steps Archaeological Research	Undertake archaeological and archival research to determine the nature and origin of the archaeological features associated with the stone steps on Mauao.	\$15,000	MOU project fund	2023/2024	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust Heritage New Zealand
T2	Stone Jetty Repair Programme	Undertake a formal assessment of the stone jetty by a suitably qualified conservator to determine what elements relate to the use of the jetty prior to the 1930s.	\$15,000	MOU project fund	2023/2024	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust Heritage New Zealand
		Establish a repair programme for the stone jetty.	\$50,000 To be determined following first sub action	MOU project fund	2024/2025	Ngā Poutiriao ō Mauao	Tauranga City Council Mauao Trust Heritage New Zealand

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xxxx xxxx

Te mahi whakatutuki
Implemented priorities

Ref.	Primary project	Full or partial completion	Sub actions	Year completed	Funding source	Ongoing operational expenses
	What was done?	Has the action been fully or partially completed?	What key steps have been fully completed as part of the project/ action?	When was the sub project/action completed?	Where did the funds come from to complete this project/action?	Are there ongoing operational costs?
I1	Undertake archaeological research into the stone steps	Full completion	Establish an archaeological monitoring programme for the archaeological features within the reserve.	The Heritage Authority for general maintenance was approved in August 2017. Annual reporting of the sites archaeological features is required under this authority.	Operational	No
			Implement an archaeological monitoring programme for the archaeological features within the reserve.	Ongoing annual reporting.	Operational	Yes - ongoing monitoring required
I2	Establish and implement a pedestrian traffic monitoring programme	Full completion	Establish a Pedestrian Traffic Monitoring Programme.	Counters were installed in December 2015.	Operational	No
I3	Establish and implement a stock grazing monitoring programme	Full completion	Implement a Pedestrian Traffic Monitoring Programme.	Ongoing monthly and annual counts reported.	Operational	Yes - ongoing monitoring required
			Establish a stock grazing monitoring programme to ensure damage to archaeological features is avoided.	This monitoring is undertaken under I1.	Operational	No
I4	Establish and implement a Psilotum monitoring programme	Full completion	Implement a stock grazing monitoring programme to ensure damage to archaeological features is avoided.	Ongoing annual reporting.	Operational	Yes - ongoing monitoring required
			Establish a Psilotum monitoring programme to ensure its protection.	Baseline monitoring was undertaken in November 2017.	Operational	No
			Implement a Psilotum monitoring programme to ensure its protection.	Baseline monitoring recommends that reporting occurs after significant works in the area, and or every 5 years to ensure the success of the plant population.	Operational	Yes

Ref.	Primary project	Full or partial completion	Sub actions	Year completed	Funding source	Ongoing operational expenses
	What was done?	Has the action been fully or partially completed?	What key steps have been fully completed as part of the project/ action?	When was the sub project/action completed?	Where did the funds come from to complete this project/action?	Are there ongoing operational costs?
F1	Undertake archaeological research	Partial	Undertake archaeological research to determine whether buried archaeological features are present within the grassed slopes of Mauao to inform the development of an interpretation plan, and restoration and planting plan.	Archaeological features have been researched and mapped in August 2019, however further research is required.	Operational	No
F4	Establish and implement hang gliding and paragliding guidelines for Mauao	Full	Work with the Bay of Plenty Hang Gliding and Paragliding Club to investigate options to establish hang gliding and paragliding guidelines, and identify take-off and landing sites on Mauao.	Completed and adopted August 2018. Ongoing annual reporting required.	Operational	Yes - ongoing monitoring required
			Implement the hang gliding and paragliding guidelines.			
F5	Establish and implement rock climbing guidelines for Mauao	Full	Work with the rock climbing user groups to investigate options to establish rock climbing guidelines, including protection of psilotum nudum on Mauao.	Resolved 22 July 2020 - rock climbing banned on Mauao.	Operational	No
F7	Investigate the establishment of a year round fire ban on Mauao	Full	Implement the rock climbing guidelines.	Ongoing programme.	Operational	Yes - ongoing monitoring required
			Investigate options to establish a year round total fire ban on Mauao, considering the most appropriate legal mechanism and the fire apparatus to be prohibited.			
F9	Establish and implement a Rock Stability Monitoring Programme	Full completion	Establish a rock stability monitoring programme.	Ongoing programme.	Operational	Yes - ongoing monitoring required
			Implement the rock stability monitoring programme.			

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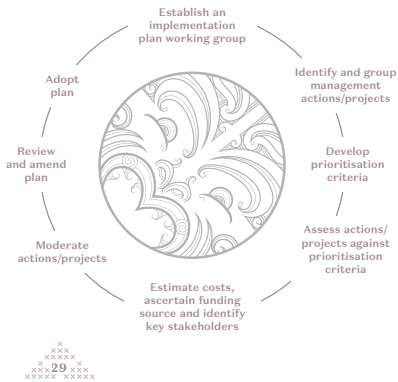
Te waihanga

Creating the Plan

How Was the Implementation Plan Developed?

The Mauao Implementation Plan draws on the Mauao Historic Reserve Management Plan. In preparing and approving the Historic Reserve Management Plan, Ngā Poutiriao ō Mauao considered informal feedback and formal submissions, representing a range of views and interests in Mauao.

The Implementation Plan gives effect to these views and interests by setting out the projects that will be undertaken to give effect to the Historic Reserve Management Plan vision and objectives. The Implementation plan was developed using a cyclical process. It is a living document, annually reviewed and amended by Ngā Poutiriao ō Mauao.



Wairuatanga / Mauri

Kei ū tonu ngā mauri, tōna wairua, hei oranga mōna, me te mōhio anō koi a te maunga tūpuna o Ngāti Ranginui rātou ko Ngāi Te Rangi, ko Ngāti Pūkenga.

Acknowledging and understanding that for tangata whenua, the existence of mauri and a spiritual dimension to Mauao requires attention and nourishment. Including an acknowledgement of Mauao as a tūpuna maunga (ancestral mountain) of Ngāti Ranginui, Ngāi Te Rangi and Ngāti Pūkenga.

Mauao Implementation Plan Working Group

The Mauao Implementation Plan was prepared by a working group made up of council staff and iwi representatives. The working group reduces bias in the implementation plan prioritisations.

The working group consists of three council representatives and three iwi representatives. These representatives are not fixed and will change from year to year as required and agreed by Ngā Poutiriao ō Mauao.

Mauao Management Projects and Actions

The implementation plan identifies projects and actions to be implemented on Mauao over the next ten years.

The implementation plan includes the projects and actions in the Historic Reserve Management Plan. Additional projects and actions are included that are consistent with the Historic Reserve Management Plan, and considered appropriate by Ngā Poutiriao ō Mauao.

The implementation plan distinguishes between primary projects and sub-actions. The primary projects represent the key deliverables, whereas the sub actions set out the considerations involved in the project delivery.

The projects and actions identified in the implementation plan provide structure, guidance and clarity to the outcomes sought for Mauao.

Prioritisation Criteria

The implementation plan as adopted in 2018 prioritised projects as first, second or third term. This gave direction to the timeframes associated with the delivery of projects on Mauao. The timeframes associated with the short, medium and long term prioritisations were defined as:

- **First term actions:** Years 1 – 3
- **Second term actions:** Years 4 – 7
- **Third term actions:** Years 8 – 10

The implementation plan prioritised projects using assessment criteria which were based on the Mauao Historic Reserve Management Plan vision and objectives.

Table 1 sets out the criteria used to assess the projects as adopted in the 2018 version of the implementation plan.

Project Prioritisation Assessment

The projects in the implementation plan are assessed against the prioritisation criteria. The assessment is moderated by consolidating, comparing and debating scores until a consensus score is reached for each project. The scores for each project are totalled to indicate the relevant priority as first, second or third term.

Table 1
Prioritisation criteria

Factor/ranking	High (3)	Medium (2)	Low (1)
Vision Alignment	The action is a key contributor to the vision for Mauao.	The action is a contributor to the vision for Mauao.	The action is a limited contributor to the vision for Mauao.
Archaeological and Cultural Value	The action is integral to the protection and/ or enhancement of archaeological and cultural values, and is fully consistent with the aspirations of tangata whenua.	The action will contribute to the protection and/ or enhancement of archaeological and cultural values, and is mostly consistent with the aspirations of tangata whenua.	The action will have limited impact on the protection and/ or enhancement of archaeological and cultural values, and does not relate to the aspirations of tangata whenua.
Landscape and Ecological Values	The action is integral to the protection and/ or enhancement of the landscape and ecological values on Mauao.	The action will contribute to the protection and/ or enhancement of the landscape and ecological values on Mauao.	The action will have limited impact on the protection and/ or enhancement of the landscape and ecological values on Mauao.
Recreational and Amenity Benefit	The action is integral to the recreational and amenity needs of a wide range of residents and visitors to the city.	The action will contribute to the recreational and amenity needs of residents and/ or visitors to the city.	The action will have limited impact on the recreational and amenityneeds of residents and visitors to the city.
Damage	The action is required to avoid irreversible physical damage to Mauao.	The action is required to avoid reversible physical damage to Mauao.	The action will have no effect on physical damage to Mauao.
Health and Safety	The action will address a threat to life.	The action will address a threat of injury.	The action does not relate to a threat to people.
Interdependency/ Efficiency	The action is essential to the completion and success of multiple other actions/projects on Mauao.	The action will assist in the completion and success of another action/project on Mauao.	The action is stand alone with no effect on other actions/projects on Mauao.

Table 2
Priority score ranges

Priority	Score Range
First Term	17 or over
Second Term	12 to 16 inclusive
Third Term	11 or under



Cost Estimate, Funding Source and Organisational Support

The implementation plan identifies the rough order cost, funding source, and lead and supporting organisations associated with the projects in the implementation plan.

The scale of each project and the extent of work involved was used to determine the likely cost. The costs identified are estimates and more detailed costing documents will be prepared as part of the project. The implementation plan will be updated to reflect more accurate costings as additional information is obtained.

Most projects identified in the implementation plan require funding. The lead organisation is responsible for ensuring that funding is available to implement projects. Tauranga City Council will provide an annual amount of funding towards all projects lead by Ngā Poutiriao ō Mauao. This funding will be determined through

the long term plan and annual plan process and will consist of either operational or project funds. It is anticipated that as implementation progresses other funding sources will become available.

The implementation plan identifies the lead and supporting organisations associated with each project. The lead organisations identified are responsible for championing the project delivery, and will work with supporting organisations in undertaking the project. The supporting organisations identified are not an exhaustive list and further consideration will be required to other interested groups.

Project Moderation

The implementation plan priority assessment process helps to remove subjectivity and rationalise the decision making process. However, a level of moderation is required to ensure that the implementation plan accounts for resourcing, and prioritises projects that address a significant risk of damage to Mauao, or the health and safety of people using the reserve. The prioritisation scores and information regarding cost and funding source inform the moderation of projects. The final distribution of projects seeks to address complexities and optimise efficiencies across the ten-year timeframe of the plan.

Review and Amend Implementation Plan

The implementation plan is a living document and will be reviewed annually. The annual review process provides for changes to the priorities, anticipated cost, funding source, and timeframes of existing projects. It also allows for the implementation plan to be amended to include new projects that align with the Historic Reserve Management Plan. All annual reviews will be completed prior to the long term plan and annual plan, to ensure council can consider the identified projects and allocate appropriate funding.

Ngā Poutiriao ō Mauao Adoption

Ngā Poutiriao ō Mauao is responsible for adopting the Implementation Plan. The Plan reflects the needs, values and aspirations of iwi and the Tauranga community, and is the first implementation plan prepared under the joint management arrangement. Ngā Poutiriao ō Mauao will adopt the reviewed plan each year, following the annual review process.

2020 Review Version

The first review was undertaken and adopted in 2020. The review focused on Section 3; updating for project implementation, cost, timing, new projects, accuracy and minor text changes as necessary. Timing for the commencement of projects yet to be implemented changed in some cases, and as the majority would be in the first term, the projects are in one table rather than three terms. This table is labelled Te Whakaarotau – Priorities, however the projects retain their original reference identification, and are in timing order.



Whakanekeneke

Making it Happen

Whakawhanaungatanga

Kia ū tonu ngā hononga i waenganui i te iwi whānui me te kaunihera o Tauranga Moana i runga i te aronui me te mārāma ki ngā tumanako, me ngā uara o tētahi, me te mōhio anō he tino taonga a Mauao.

Maintaining relationships between iwi, hapū, Council and the Tauranga community built on mutual respect and acceptance of each others interests and values, including an acknowledgement that Mauao is regarded as a significant icon for Tangata Whenua and the Tauranga community.

Working together

The implementation plan influences the delivery of projects on Mauao by providing direction, enabling funding partnerships, and encouraging joint relationships. Many different groups, organisations and interests will play a role in delivering the implementation plan for Mauao, including:

- Ngā Poutiriao ō Mauao
- Tauranga City Council
- Mauao Trust
- Local groups and clubs
- Local businesses
- Heritage New Zealand
 - Department of Conservation
 - Ministry of Fisheries
 - NZ Fire Services
 - Mount Maunganui Surf Club

Ngā Poutiriao ō Mauao will continue to lead the delivery of the Mauao Implementation Plan work together, with other lead and supporting organisations, by applying the principles outlined below:

- Rangatiratanga
- Kaitiakitanga
- Wairuatanga/Mauri
- Whanaungatanga
- Manaakitanga
- Kotahitanga





How will we fund the implementation plan?

The implementation plan sets out projects and identifies lead organisations that are responsible for championing delivery. It is intended that funding of the implementation plan or the sourcing of any funding initiatives will be the responsibility of the lead organisation.

The implementation plan considers the cost of delivering the projects led by Ngā Poutiriao ō Mauao. Many of these projects will not incur any cost other than staff time. Tauranga City Council will provide an annual amount of funding towards those projects that do incur a cost for Ngā Poutiriao ō Mauao. The amount of funding will be determined through Tauranga City Council's long term plan and annual plan processes. The funding will comprise of operational and project related funds.

Operational funds

Operational funds will be used for the day to day management of the reserve, including:

- Providing ongoing safe public access
- Maintenance and repairs; and
- Administration

Project funds

Project funds will be used to implement projects not covered by an operational fund and that are either identified in, or are consistent with the Mauao Historic Reserve Management Plan.

The operational and project funds will not necessarily cover the cost estimate of a project. Funding will either come from reprioritising the allocation of existing resources, or by seeking new investment. It is intended that as implementation progresses new funding avenues will become available through public-private partnerships, private sponsorships, government grants, and new funding models.

Funding for projects led by organisations other than Ngā Poutiriao ō Mauao will generally be met by the lead organisation. These organisations may work collaboratively to source funding where required.



Te Arotakenga

Reviewing Our Success

How Will We Measure The Implementation Plan?

Monitoring and reviewing the Implementation Plan will be the responsibility of Ngā Poutiriao ō Mauao.

The Implementation Plan will undergo annual review and reporting. Through this process the Implementation Plan will be refined to add and amend projects. Ngā Poutiriao ō Mauao will report annually to the Tauranga City Council and the Mauao Trust on progress and key achievements relating to the Implementation Plan.

Rangatiratanga

Ko Ngāti Ranginui, rātou ko Ngāi Te Rangi ko Ngāti Pūkenga ngā pāwhakawairua o Mauao, inā hoki kei te Mauao Trust tonu te mana whakatau whakamutunga.

Acknowledgement that final decision making for Mauao rests with the Mauao Trust.





Ātea	Courtyard, public forum – open area
Hāpu	Subtribe
Iwi	Tribe
Kaimoana	Seafood
Kaitiakitanga	Guardianship
Kotahitanga	Unity, togetherness
Manaakitanga	Kindness, generosity, respect
Mana	Authority, power, prestige, honour
Maunga	Mountain
Mauao	The original name of the mountain, reinstated from Mount Maunganui in 1998
Mauri	Life force – inanimate and animate objects contain mauri. Traditionally mauri was the “gift of life”, the spark captured in the saying “Tihei Mauriora” – behold the breath of life
Ngā Poutiriao ō Mauao	The Joint Administration Board for Mauao comprising representatives from Ngāi Te Rangi, Ngāti Ranginui, Ngāti Pūkenga, the iwi Waitaha, and Tauranga City Council

Pouwhenua	Post markers that tell the story or association between the people and the land
Rangatiratanga	Chieftainship, right to exercise authority
Tangata Whenua	Local people, hosts, indigenous people
Taonga	Highly prized and treasured
Tauranga Moana	A term that describes the three tribes of Tauranga
Tūpuna Maunga	Ancestral mountain
Wahi tapu	A sacred place. Traditionally an area that is subject to restrictions due to an event/activity such as death, loss of blood, for a specific purpose or subject to rituals
Wairuatanga	Spirituality
Waka	Sailing vessel or canoe
Whanaungatanga	Relationship, kinship, sense of family connection





10 DISCUSSION OF LATE ITEMS

11 CLOSING KARAKIA