

Mt Ruapehu Crater Lake Lahar threat response

- WHANGAEHU RIVER BUND, CRATER RIM ENGINEERING, WORLD HERITAGE STATUS

Whangaehu bund

Where is the bund located?

The bund (stopbank) is located at the end of a ridge on the true left-hand side of the Whangaehu River close to the national park boundary. It is constructed in the location most suitable for preventing a lahar spilling over the Whangaehu riverbank into the Waikato Stream and ultimately into the Tongariro River.

What is the bund made of?

The bund is built from material recovered from the Whangaehu riverbed.

What are the bund dimensions?

The bund is approximately 285 m long, 20 m wide and a maximum of 4.6 m high.

Will deflecting the worst case lahar down the Whangaehu river create additional risks to infrastructure and people?

The increased risk is negligible. It is projected that flows down the Whangaehu would increase between about zero and seven per cent, or looked at another way, would increase the water level at Tangiwai by about 2.5 cm, or 0.5 %.

Crater rim engineering

Why not cut a trench through the crater rim?

The Minister of Conservation has ruled out an engineering intervention at the Crater Lake. As well as raising technical and safety concerns, this option also raises several major conservation, cultural and legal concerns that would have to be addressed. The Crater Lake is the most significant natural, scientific and cultural site within Tongariro National Park. Any physical interference is regarded as unacceptable to iwi and indeed to many conservationists, scientists and recreationalists (as evidenced by submissions to the Assessment of Environmental Effects (AEE, see Fact Sheet 3) and subsequently) Making structures on the flood plain able to withstand lahars is a better solution which will provide long term mitigation of risks. (See also Fact sheet 6)



What are these concerns?

- An engineering solution runs counter to National Parks Act principles, the Tongariro National Park Management Plan, and the park's World Heritage status.
- Engineering would compromise the first two widely agreed objectives of the Management Plan which include managing the park so that present natural processes (such as lahars) continue, and maintaining the cultural, spiritual and inspirational heritage of the mountains of the Park.
- Engineering would also compromise the natural and cultural World Heritage values.
- Conservation organisations and local iwi are opposed to an engineering solution at the crater. For iwi, engineering intervention would diminish the spiritual and cultural values of the Crater Lake, which is located in the most sacred part of the mountain - the summit area.
- The above considerations raise the possibility of legal, judicial or Waitangi Tribunal action if engineering work was carried out.
- Engineering work would create a precedent for further work at the crater and elsewhere on Ruapehu where lahars occur. It could also create a precedent for undertaking such work elsewhere.
- Bulldozing at the crater would create a false sense of security in the Whangaehu lahar path and possibly other lahar paths on the volcano.
- Most submissions on the AEE did not favour an engineering solution at the crater. Notably Electricorp/Genesis and the Army concluded that risks to their structures from a worst case lahar did not justify engineering work at the crater and Transpower and Transrail/Ontrack considered that engineering work at their structures is not justified.
- Bulldozing a trench to channel lake water would not necessarily work because it would only address the lahar risk from one known location of weakness. We cannot confidently identify all weak areas in the crater rim. Furthermore, a trench could be blocked by future eruptions, rendering it ineffective and requiring ongoing bulldozing interventions
- Engineering work at the crater would expose the workers to risks from bad weather, volcanic activity and altitude effects.

Would public safety be enhanced if there were no water in the crater?

No. Without the lake, it is reasonably likely that the characteristics, frequency and impact of eruptions would change in some way. For example ash eruptions would probably become more frequent, during which ash would be blown into the atmosphere. This would deposit material on the surrounding area, including the mountain's ski fields, and could present hazards for aircraft - as occurred during the 1995-96 eruptions.

The Department of Conservation's mission is: To conserve New Zealand's natural and historic heritage for all to enjoy now and in the future. Ko ta Te Papa Atawhai he whakaute he tiaki i nga taonga koiora me nga taonga tuku iho hei painga mo te katoa inaianei, mo ake tonu ake.

World Heritage

What is World heritage status?

World Heritage status is conferred by the UNESCO (United Nations Educational, Scientific and Cultural Organisation) World Heritage Committee on protected natural and/or cultural sites of outstanding universal value. Mt Ruapehu is within Tongariro National Park, which was granted World Heritage status for its natural values in 1990. In 1993, the Park's cultural landscapes also gained World Heritage status. This was in recognition of the outstanding cultural importance of the Tongariro volcanoes to tangata whenua. The World Heritage cultural listing also recognised the significance of the gifting of the sacred peaks to the Government by Tuwharetoa paramount chief Te Heuheu Tukino in 1887. This act led to the creation of the New Zealand national parks system. The Crater Lake is especially important for both natural and cultural world heritage values, and is therefore arguably the most important area in the Park.